COAL AGE

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# Looking Backward.

IN 1860 the annual product of all American mines had a value estimated at $505,398,000. Of this total, the output of our coal mines and coke ovens was 4 per cent., or approximately $20,000,000.

The combined mining industry of that early period, although in its infancy, had grown to be a business of such magnitude that there was need for a paper devoted solely to its advancement. This necessity resulted in the creation of *The American Journal of Mining*, now known as *The Engineering and Mining Journal*, a technical weekly publication, which has become as much a part of the mineral interests it represents as the shafts which produce or the men who toil in the dark depths.

In 1911 the yearly production of metals and minerals in the United States had reached the enormous total value of $1,594,903,204. From a production of 16 million tons in 1860, the annual coal output had crossed the 500 million mark. The value of this great tonnage( including coke) was $738,488,000 or about 46 per cent. of the whole value placed on the entire output of all American mines.

Is it any wonder, then, that the publishers of *The Engineering and Mining Journal* decided that the production of coal was an industry equally as important as metal mining, and that one journal could no longer properly serve the two fields? Here was a business employing nearly a million men without a representative weekly paper.

The result was COAL AGE, and a stack of letters here on our desk, sent us by readers in all fields, is indisputable proof that there was a real need for an independent technical coal journal. Everyone in the industry has appreciated the fact that our pages are always open to earnest men who have sane ideas. This policy of "free thought" has curbed criticism, for no man admires a fellow who fires from ambush when the rules call for a battle in the open.

Each and every article, letter, editorial or foreword, has been free for discussion, and during the entire year which has just passed, not a single reader has been denied a fair hearing. This is a record we are proud of, and we propose to follow the same policy in future months. If any subscriber, therefore, at any time disagrees with the remarks of an editor or contributor, let him air his views in the paper, or *forever* keep silent. Those who dislike publicity need only attach their names to show good faith, and it is not necessary that their opinions be printed with a signature attached.

It is the human side of COAL AGE which has appealed to our friends and readers. At the very beginning we endeavored to make plain that our understanding of a technical journal did not begin and end with the sole idea of "scientific pre-eminence." A man may be a brilliant engineer and still be an utter failure as a mine superintendent or manager. That company employing the most intelligent, self-respecting men will secure the greatest safety and operate at the highest efficiency. It is just as much a science to know how to secure and hold high-class labor as it is to understand the intricacies of ventilation or haulage.

At all times we have considered our editorial position as nothing more than a trust imposed in us by those we seek to represent. If we have occasionally presumed to lead, it has not been of personal choice, but, rather an obedient compliance with expiicit commands of unbiased opinions. We have never sat "on the fence," or "carried water on both shoulders" when a decision was desired of us, but every stand we have taken has been in the open—under the direct gaze of friend and foe.

Our aim has been to please everybody, but we have entertained no hope of accomplishing such a miraculous result. At all times there has been full realization that the other fellow is as likely to be right as we are, and there has been no reluctance on our part in printing both sides of a question, or in taking the same medicine we so often attempt to administer.

Human experience is like the stern lights of a ship at sea—it illumines only the path we have gone over. Therefore, in glancing backward we can see many places where energy was wasted in climbing over obstacles we might easily have walked around. However, the past is dead—let us look at today and tomorrow.

# The Situation Today.

ON this, our first birthday, we have just cause to feel elated. When the decks were cleared for action just one year ago, not even the most optimistic of our well-wishers prophesied that in a short 12 months the new mining paper would have a larger paid circulation than any other technical coal journal in the world.

This unexpected attainment has not only been accomplished, but there is no let-up in the flood of new readers each day brings to us. There have been times when we were a bit anxious to know whether Coal Age had "made good" in the eyes of its friends, but our campaign for renewals—already started—has dispelled these fears. You can fool many men once, but only a few the second time, and since practically none of our early supporters is forsaking us on the second lap, the obvious conclusion is that "the goods have been delivered."

We have not tried to hunt two hares with one dog. Every gun has been trained on a single purpose—*the advancement of coal mining*. We have realized all along that the solution of the industry's greatest problem lies in the better education of mining men, and the sum total of our efforts has been expended in supplying correct information in the simplest and most digestible form.

And what do you think it has cost us? In the neighborhood of a cool hundred thousand. It's an expensive job, this task of publishing 2000 pages of coal literature, illustrated by 1100 drawings and photographs of the most perfect manufacture. It is likewise a matter of much financial moment when you keep 45 men traveling in all states, not to mention several foreign countries.

Of course, we expected to lose money, and we will spend a lot more before the bright dawn of that glorious tomorrow, when income and expenses will strike a happy balance. If you hate a miser and love a liberal spender, then we lay claim to your deepest affection, for at present, we are a plain out-and-out philanthrophy devoted exclusively to the cause of better wages and lower costs.

It is as impossible for an uninformed person to succeed as it is for an empty bag to stand upright. No man can read 52 issues of Coal Age and still retain membership in the lodge of the "uneducated." Foolish men make feasts, but wise men eat them. We have provided the spread—are you sitting at the table? Of course, you are a subscriber, but how much are you getting out of it? How many hours do you read each week? Don't forget that "what *you* know is a club for yourself, but what you don't know is a meat-axe for the *other* fellow."

The man who is continually hollering about not getting a fair show is usually the one who is ever waiting for an extraordinary opportunity, and will never seize a common occasion and make it great. The worst wheel of a cart always makes the most noise. A fellow may get another chance, but the odds are if he misses the first opening, he will lose a lot of blood before he gets a second try.

We feel sure Coal Age is your opportunity. By reading its pages you come by easily what others have labored for. By entering our discussions you tip over the bushel measure which has so long hidden your light. Stop talking about hard luck. Get the prize—let others explain how they lost. We believe in you and your business, and we are staking our future and our money on that belief. Cooperate with us more closely this second year, and you will find the benefit is mutual.

Before closing this talk dealing with the situation as it stands today, let us remark that we have persistently ignored petty strife in all our year's work. Never once have we purposely offended any individual, although no doubt here and there a thrust has occasionally been directed at us. We always try to remember that Coal Age is gunning for big game, as constituted in a high purpose. A mosquito may cause a good marksman to miss an elephant.

# Looking Ahead.

PRUDENCE sometimes consists not so much in looking ahead as in walking that way. A fellow can aim his telescope at a far-off oasis and gaze to his heart's content, but the man who keeps traveling will drink the water and eat the fruit.

That's the situation with us exactly. We are scanning our horizon for a line of travel best adapted to the interests we serve, but we are not losing any time sitting by the wayside searching for a route where no obstacles appear to exist. There is never much to talk about after a smooth voyage, and we want to have something to say when the port is reached.

One year ago we made a lot of promises about what Coal Age proposed to accomplish in its first year's life. Now we will tell you briefly what we expect to do in the second 12 months of our existence. If we fulfilled our pledges once, there is reason to have confidence in our ability to repeat.

The fire you kindle yourself always seems the warmest, and it gives us the greatest pleasure to feel that this journal has been built from the ground up by the present editors on independent and original lines. On the two pages just preceding we have frankly stated our basic policy, and in the coming year, there will be no deviation or retrogression from the course of procedure already outlined.

We will continue all the present departments of our paper, conducting them on broader lines. We have secured the services of a number of competent technical translators, who will see that Coal Age receives an English version of every coal article which is published in any foreign country. It will also be our plan to reprint all worth-while articles which appear in American and English papers.

The active field staff of Coal Age contributors has been enlarged by the addition of some of the most celebrated mining engineers in England, France, Belgium and Germany. Each of these men has been assigned definite subjects to handle, and there is no doubt but that the foreign articles which will begin next month will prove the most valuable addition to American coal literature ever printed.

Our coal news department—already the best summary of the kind ever published—will be brought to a standard of excellence pleasing to the most critical. We have correspondents in nearly every town in each coal state, and we expect to be able to promptly chronicle all events of passing interest.

And right here let us ask every COAL AGE subscriber to constitute himself an official news correspondent for this paper in his particular district. We want to know about every improvement each coal company contemplates making. No matter whether it relates to the purchase of a single pump or the construction of a whole new plant, we want to hear about it and will pay well for the service rendered us.

It is also our desire to record all financial news such as purchases of land and coal company transfers. Our column of personals should note all important movements of individuals and each change in occupation of every subscriber. In this way, with all the friends of Coal Age lending a hand, we hope through such co-operation to increase the value of our paper beyond the fondest expectations of our staunchest supporters.

On another page in this issue Mr. Hall has told about the plans of our sociological department for the next year. In like manner Mr. Shurick has written his ideas concerning the development of that part of our journal devoted to coal trade reviews. Mr. Beard's work along educational lines speaks for itself and is too well known to need comment. His time and services will continue to be available to those ambitious men who are desirous of bettering their position.

We will shortly add mechanical and electrical departments to our paper. Thereafter all matter coming under these two heads will be concentrated in their respective sections.

In conclusion, we desire to apologize for occupying so much space with our story, and beg your indulgence on the plea that this is our *First Birthday*.

# A Heart to Heart Talk with Readers

## Including a Confession, Some Facts and a Suggestion.

By Floyd W. Parsons

Every mining or industrial proposition has its president, each ship its captain, and every journal its editor-in-chief. When a company meets with success, its highest officer generally gets the bouquet and whether he wills it so or not, must wear the illuminating "halo of genius" It doesn't particularly matter if the man next below is the "live wire," which energizes the concern, or if all the ideas worth while come from a couple of hustling superintendents, or a number of loyal and highly efficient foremen who have so far remained undiscovered by the operator "next door," the howling mob demands the privilege of blaming some innocent unsuspecting "man higher up" for the success of said corporate enterprise.

In the publishing business, an editor is a man (figuratively speaking), who knows considerably less about most matters of moment than the majority of his readers, and whose principal job in life is to avoid discovery. The only difference between the editor-in-chief and the associates on his staff is that the former alone gets fired when a policy is wrong or sinful errors occur.

There can be nothing more terrible than to be the only editor on a paper. If there are several, you can smile sweetly and elevate your chest when some misguided friend tells you how much he enjoyed your editorial, which you know was written by another man. And when the next subscriber you meet is ready to knock your head off for the fool remarks you really did make concerning some vital subject, it is then easy to side-step the issue and confidingly whisper that a bigger fool than yourself wrote that particular editorial, and that you always did oppose the ideas included therein.

But levity aside, I here and now claim my full share of the credit for the success of COAL AGE, and wish to state that my proper proportion is exactly 20 per cent. Five of us started the work, and each of my associates has done valiant service.

Mr. Beard has handled the educational work as outlined principally in the departments, "Examination Questions" and "Inquiries of General Interest," in a way that could only be done by a man who has devoted half a lifetime to such class of work. Our correspondence shows that just as many superintendents and men higher up were interested in these features of our paper, and profited thereby, as there were foremen and firebosses.

Mr. Hall has worked early and late to lend a helping hand to the "Welfare" work, which is now so completely absorbing the attention of the industry. His fertile mind has helped fill many a breach in almost every part of the paper. Never has he failed to arise to the occasion demanded. As a "pinch" hitter and "utility" fielder, few can surpass him.

Mr. Shurick came from the "wild and woolly west," where a fellow can walk a day or two without having to greet neighbor or friend. It has been hard for him to get enough room here in New York to move about, but we have hopes of reducing him to a state of semi-contentment with his narrow surroundings. In addition to his work as editor of the "Coal Trade" department, he has busied himself with articles relating to the operation of mines in his beloved West. During the next year Mr. Shurick will devote much attention to the "coking" end of the industry, and no one who has followed his work so far can doubt but that the next 12 months will witness the birth of a "coke" department in COAL AGE, which will be more complete and of greater value than any similar work ever attempted.

Mr. Kneeland is devoting his time to subjects "mechanical," and is carrying on the work so ably started by Mr. Walker. His recent experience with the U. S. Coal & Coke Co., in southern West Virginia, has fitted him well for the task of giving our readers the best literature available on the subject of mechanical engineering at collieries.

### THE FACTS

On preceding pages we endeavored to outline briefly a few of our plans for coming months. Not half was told, and perhaps it is just as well. You know when an engine expends all its steam in whistling, there is nothing left with which to turn the wheels. We have a few secrets we hope to spring with pleasing effect, and a secret is not a secret when we tell somebody. You remember what one wise old owl said, "A safe secret is a confidential letter—unwritten."

I will, however, divulge one of our plans, which has to do with a series of 24 articles, to be prepared by an engineer who will cover the entire anthracite field. These discussions will not start "soon," which expression, like a "Chinese minute" may mean one week or six months, but will begin immediately and continue as nearly as possible every other week during the coming year.

Now I am going to take each reader into my confidence and talk shop for just a moment. No paper could exist if it were to depend on the income derived from yearly subscriptions. It is the advertising pages which support every publication. We have passed the first year mark, and during all the months that have gone by, each one of us had a single aim, and that was to edit a paper so perfect in style and so complete in detail that it would be indispensable to all progressive coal men.

It was also our wish that COAL AGE should have a circulation greater than any other similar paper in the world. We have already told you about the success which has attended our work, and if any further proof is necessary, it is furnished on our editorial page, where we publish a sworn statement of our weekly circulation, which figure is 9000 for this issue.

And when we talk circulation, we follow the inviolable rule laid down by the "Old Man" for all the papers issued by this company. Every bit of dead timber is cut from our list. A subscriber has to pay, or his paper is stopped. There is nothing arbitrary in this policy—it is a strict business procedure. We pay for everything we get, and in turn desire that each one pay us for the journal we print.

It costs the Hill Publishing Co. in the neighborhood of $10 a year to give each subscriber 52 copies of COAL AGE. These figures show plainly that the reader gets the long end of the bargain. It is the advertiser who pays the freight. Is it not fair, then, that the fellow who foots the bill be given due credit for the important part he plays?

### THE SUGGESTION

I intend to ask all COAL AGE subscribers today to give their hearty support to those manufacturers who are using our pages to advertise their wares. No company producing an inferior or bogus product has enough money in their possession to purchase a line of space in this journal. You are taking no chances when you use our selling section as a guide in the selection of machinery and supplies for your plant.

Down in the hearts of the editors of COAL AGE, there is a deep feeling for those concerns catering to the coal trade who voluntarily came in with us at the beginning of our fight. They had faith that we would be able to make good, and backed up this belief with their hard cash. Now, with a circulation which will shortly pass the 10,000 mark, and with a reputation for dealing out the fairest kind of

play, the second year of our existence will record a tale of deeds which will penetrate the deepest depths of many a cranium.

A word to you, Mr. Advertiser, straight from the editor who is trying to run the show and who prefers to do his talking with our 8728 subscribers looking on. We are going to put a trademark on your goods these next 12 months which every coal man in every state will plainly see without having to adjust his glasses. We haven't had a lot of time this past year to devote to you personally, but the situation is greatly changed in the second heat of the running. If you have been pleased with our small efforts in your behalf so far, you will be literally "tickled to death" from now on.

If we haven't already become well acquainted, don't think it has been due to any desire on our part to avoid a meeting. There isn't any false dignity lying loose in this office. We have heard a lot of talk many times about the lurid line of distinction which separates the editor and the advertiser, and we simply exclaim—bosh. Any editor of average sanity can distinguish between material which is of technical value to a reader and a lot of trumped-up copy designed solely for advertising purposes. Just because an article comes from some engineer in the employ of a manufacturing company is no absolutely certain sign that the information is valueless. Many an engineer for some big machinery concern threw up a good job at the mines for a still better one with you. That's the reason, why, Mr. Manufacturer, we value your occasional contributions, and look upon much that you send us as the very best kind of technical literature, written by competent engineers of experience, and not as mere "house puffery."

# An Electrically Driven Cager

**Description of a device for pushing cars onto a cage, replacing those already there. This is accomplished through the medium of a motor driving a toothed sprocket chain by simply pulling a lever against a stop.**

Note—This article was translated from the German by E. P. Buffet.

The inadequacy of human strength, and also a recognition that many tasks which today are still performed by human labor could in most cases be done much more advantageously by mechanical means, has incited many mine managers to give attention to mechanical devices for loading cages, with the result that such apparatus have come into use in isolated cases. If mechanical loaders, despite the need for them, have not yet been generally introduced, the reason must be in part that those hitherto constructed have been more or less complicated and delicate, which qualities are not favored in mines.

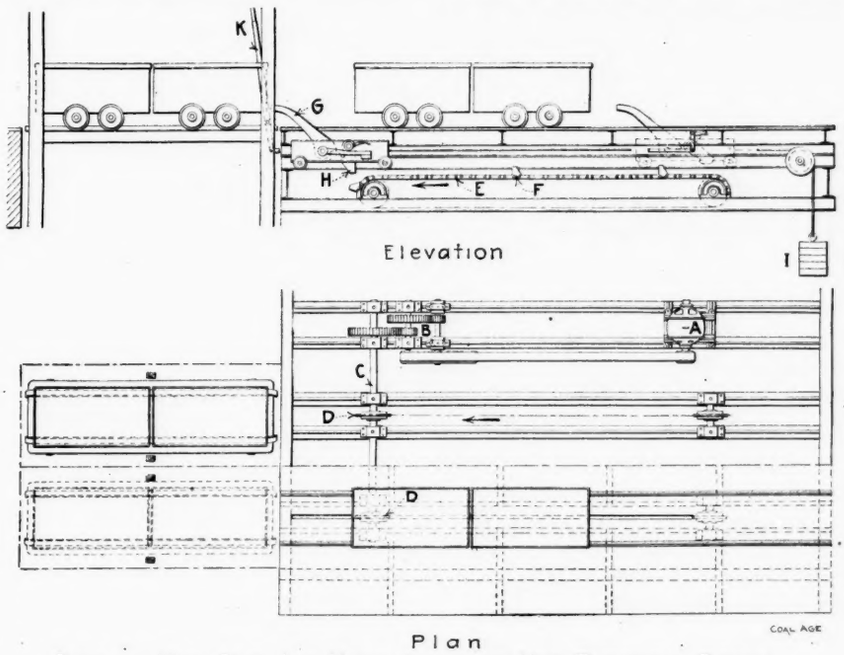
### Cars Pushed Forward by a "Striker" on Movable Carriage

The new loading device, of the Hohl patent, whose manufacture has been undertaken by Gebr. Eickhoff, Machine Manufactory & Foundry, of Bochum, Germany, and which is here illustrated, is especially noteworthy for its great simplicity and reliability.

It is driven by the electric motor *A*, whose power is transmitted through a belt to the gearing *B*. This gearing drives the shaft *C*, on which are seated the sprocket wheels *D*. The latter drive the sprocket chains *E*, which at certain distances are provided with teeth *F*. The chains move always in the same direction as shown by the arrow.

Over each chain is placed a traveler or carriage, which runs between two U-irons and carries the "striker" (or automatic lever) *G* as also the engaging pawl *H*. The striker *G* is movably mounted on its axis so that in returning (or in the backward movement) it can be slid down under the car axle and then automatically raised up. The traveler is drawn back by a counterweight *I* hanging on a chain.

In the drawing the dotted lines show the carriages in their rear position, therefore, in the position of rest. They are operated by the hand lever *K*. This is connected by a pull rod with the cranked lever *L*. If now full cars are to be run off of the cage and at the same time empty, or rock-laden cars are to be pushed onto it, the latter should first be placed in the indicated position in front of the "striker" *G*.




Showing How Cars Are Handled by the New Electrical Device

### A Counterweight Brings Carriage and "Striker" Back

When the ascending cage has arrived at the pit mouth, the operator grasps the hand lever *K* and pulls it against a fixed stop. By pulling the lever, the engaging pawl *H* is brought into the path of the chain teeth. The next tooth that comes along strikes against this pawl and takes with it the small car or traveler, on which is the "striker," whereby the car is brought upon the cage. When this is accomplished the carriage is at once returned to its initial position by the counterweight. The entire function of the attendant is, therefore, to pull the hand lever and hold it fast until a tooth strikes against the engaging pawl *H*. The lever can then be released because the apparatus continues its work automatically.

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One part cement, 2½ parts sand and 5 parts broken stone or gravel is a good composition for the construction of a concrete air crossing. For reinforced work the concrete should not be dry; a "wet mix" should be used. Concrete is easier to lay than brick and does not call for as much skilled labor.

# Ideas and Suggestions

**Interesting Talks Submitted in Response to Our Recent Request for Forewords.**

## A Soliloquy on Salaries

By W. Va. Engineer

Have you ever noticed how some officials of a company will quibble over a small increase in a man's salary, yet literally throw away money on some job about the plant?

An instance comes to mind, in which a large corporation refused to raise the salary of one of its employees who handled a rather important position. He left the company and nobody was installed in his place until the accumulated work demanded such, and then a 16-year old boy was placed in the vacancy at $35 a month less! A rather precocious generation, this, or, perhaps, a more experienced man above him succeeded to the true responsibility.

What would you expect to gain by this move? A curtailment in expenses of $420 a year, you say? Perhaps, if no mistakes were made, but you cannot expect a school-boy brain to replace that of a trained man. Besides, these actions get the other employees to thinking (and not only thinking sometimes) and criticising, until eventually that spirit which makes for coöperation and system, gives way to disgust and disorganization.

This should be an age of efficiency and not selfishness, although you cannot eliminate the latter, try as you may. However, it is poor policy to increase your earnings by a reduction of salaries, especially when the cost of living is increasing so rapidly. This is particularly true when by the increase of one man's salary you can cut down the force sufficient to more than make up the difference, or increase profits by heavier production.

It is this policy of the suist, in his eagerness to rise in the company, that causes him to keep down the salaries of the men under him—the very thing, in all likelihood, which he so bitterly criticized at one time himself. And the ultimate result is a general lowering in the efficiency of the working force.

Give a man an *incentive* and he will give you the best that is in him. There must be an appeal to his self-interest—since that is what keeps him from starving. But that particular brand of self-interest which stops at getting one's necessary wants alone, will never give us high industrial conditions.

Two brothers, now both wealthy coal operators, began their careers by developing and aiding the men of executive ability by means of increased salaries and stock in operations. They have today one of the most loyal organizations in the coal business, and their success can be largely attributed to this policy toward its employees.

What a contrast to the company that not only refuses to increase the salary of a trusted employee, but also prevents him from obtaining a more lucrative position with another company by means of its business relations! Of course, you know what that employee has in mind. He would naturally feel that there is no incentive for him to do better in his work and that the first position offered at the same salary is better than his present office.

Physical science is at the bottom of all industry, but, unless you encourage the former you retard the latter.

*"Yours for efficiency."*

# Frequent Changes of Mine Officials

By Sim Reynolds*

Not many words are needed to show the ill effects of the flitting habit among mine officials. It is responsible for much of the haphazard mining one sees and hears of; sometimes in a fearful way, more is the pity. I know of mines where a dozen mine foremen have been in charge in less than three years!

One large mine has changed its foreman on an average of once every six months for the last four years! And this is to say nothing of the sequent incomings and outgoings of firebosses, laborbosses, etc. For as a rule, when a new man takes charge of a mine several changes almost invariably occur immediately after his installation.

Inevitably, methods just well under way are dropped, and a new system adopted. A different mind rules and different ideas are enforced. If those displaced were always bad, the change would be so much the better. But is that always true? Does not arbitrary and generally unthoughtout reform work a greater harm than good?

Methods, local rules, pet ideas of managing certain details, all of which may be applicable to the mine left, may be far from best at the mine just accepted. But as a rule if the workings are far extended, the new boss' ideas of management are promulgated and set going almost before his personality is felt and intimately known in the mine's extremities.

And, as in the cases referred to, he has often flitted, and another set are on deck before he gets a good chance of seeing how they work, or a fair chance of revising them to meet local conditions. I can attest this demoralization from personal experience. But its obviousness is evident regardless of my attest.

For instance, a mine-foreman has been at a colliery for six months. By that time he knows his men fairly well. He understands their temperament as a whole and almost individually. He knows the "soldiers" among the day-men and those who will work well with or without supervision.

Among the tonnage men he knows the chronic agitators, and those he can depend on to stick by him in a crisis. He has learned his mine in the same way as he has learned his men. He is conversant with its weak and dangerous places. He knows where it is strong. He has learned by that time those parts which must be constantly guarded to insure safety, and he can rest easily while away from certain other sections. In short he has found the mine's pulse, and has his finger on it.

But if the mine is an extensive operation he did not learn all this in a day, or a week, or a month. By this time, he is giving a maximum of service, and every bit of his work is bringing the limit of good result. And then, because of the "carpet-bagging" tendency observable in himself, his men, or his employer, he leaves, and the same process of acquaintance and enlightenment has to be begun

*Mine Inspector, W. J. Rainey Co., Braddock, Penn.

all over again. Chaos is again supreme. And why?

Perhaps because the manager or operator was one who poured forth his criticisms openly, and kept his good opinions regarding the new man to himself, for fear the open exhibition of justly deserved praise might be the indirect cause of a demand for raise in salary, etc.

Or he (the foreman) might have been one of those rare good fellows who believe the law was made to be fulfilled regardless of its effect on the company or the men, but whose every attempt to carry out its provisions was met with stubborn opposition from those above and beneath him in the mining scale; from the man "higher up" by frequent reinstatement of employees discharged for good and sufficient cause; from the men by petty strikes for the same reason.

Or there may have been one of many other causes which will come readily to your mind and above and beyond all else perhaps the ever-present disposition to seek a change. But even if we grant that he has only the average qualifications, the whole mine is worse for his going, and at the best will be some time picking up again.

Multiply one of these instances by a great number and we have a plausible cause of much of the so called "haphazard" mining, with its fearful mortality-roll. As the mighty river is but a commingling of tiny raindrops, so is success in our great problems traceable back to the petty detail of a multitude of mines, which, being carried on satisfactorily and in accord with the law general and local, solves the largest problem confronting us, but, being broken at this mine and at that, keeps alive these troubles which vex us all.

There are in this country today several large corporations which have in large measure solved the problem for any of us who desire to emulate them. Practically all the greater railroad systems hold their men to a great extent by a definite method of cumulative reward for long service and efficiency. In opposition they have a system of demerit which is utterly unlike anything we have in our industry and which automatically creates discipline and efficient service.

Men, being but children grown, care but little for vague promises of the law, and less for an industrial method which offers no reward whatsoever for continued and conscientious effort. They care but little for an abstract proposition, but they care a great deal for a concrete example which they can see working out to a good and to-be-desired end in their daily toil.

We have yet as a whole to learn the lesson long digested by such of our industrial contemporaries as The Standard Oil Company, Pennsylvania and other large railroad systems, a considerable number of the larger iron and steel corporations, and many other branches of industry which we need not name.

This lesson is that a constant upbuilding of loyalty and law-fearing in an employee is a valuable asset to the firm. Like them we have to carry out some plan of automatic advancement which must be watered and fertilized by the employee himself in a spirit of mutual interest, a feeling of interdependence with the corporation which pays him his wage.

Nor do I for a moment doubt that our men, generally, will be just as amenable in this respect as any men employed by others, if we plan rightly, and with a view strictly to the exigencies of our class of labor. And, further, I am sure that we will not need to seek far among the many patterns tried and proven good by others to find one suitable to our needs. And, when we find it, I am greatly optimistic in my belief that it will prove an ultimate source of benefit and gratification to all concerned.

# Some Practical Hints on System

By Josiah Keely*

We have probably all, at one time or another, felt the innate longing for system, so inelegantly but forcibly expressed by Hen Filster in the words: "Dam it, I must and will have some sistom" (see COAL AGE, Vol. 2, page 186).

Talk of systematizing the work about a colliery is often rather barren of concrete suggestions. Vital points are perhaps, oftener stumbled upon through the energy of some conscientious foreman, desiring to make good, than planned by the born organizer. Especially is this true where the conditions seem to defy theoretical planning. We are all familiar with the man who is anxious to do things, but who consumes his energies, striking at the many ends of the day's work only to find, at the end of the shift, that what he has done should have been taken up in a different order.

Sometimes a system will unfold itself by picking out one end in the tangle and following it through. We will take for example the placing of the empty cars at the working places.

Drivers hauling from rooms to the main partings, begin to "cut the corners" as the time approaches for taking the stock to the stables. Some of them instead of hustling around to put things in good shape for the next morning, prefer idling the last half hour or so away in a crosscut. An inspection around the working places after "quitting time" will usually show a number of loads not moved, a mining machine ready to be taken out, a fresh-cut place with no empty car ready, or a load off the track in a room. All of this means a delay next morning.

Say, for a start we center our attention on just the placing of empties, having one left each evening in every place where there is any coal. Anyone making the rounds will not have to go far before finding a violation of this requirement. There are, of course, excuses, and when these begin to come in, something like a system may be evolved. One driver makes the excuse that he thought the loader had gone out and would not fill the last empty; that the track needed fixing; that a shoe was off, or any one of the many "old stories."

Here is a fresh-cut place with no empty, the driver reporting that the machine was cutting when quitting time came. But you will ask who moved the machine? The driver doing this should have placed an empty. Another gives as an excuse that there were no empties at the side track, and so on. This continual hammering away is eventually felt all along the line and finally the driver begins to report actual reasons why he has failed to place a car, and then it is "up to" someone else.

Perhaps some mine foreman may say that this is an old rule, but anyone who will take the trouble to inspect the workings at the end of a shift will find some violations, each of which will suggest a remedy until the effect will become apparent throughout the mine.

Someone else may suggest another basic point to work to with equal advantage, but the placing of empty cars at the face will come as near affecting the whole colliery, perhaps, as any other one thing. This brings the loader in earlier in the morning, knowing that he will find a car ready. He will stay in later in the evening, assured that his last load will always be hauled. The coal starts to the tipple earlier, and all of each day's run is dumped.

It is probably not against the rules of the game to pick out two, or even three points in the work and follow them up in this way, but it is better for the average man to concentrate his entire thought, attention and energies on one at a time.

*Supt. No. 32 mine, Consolidation Coal Co., Shinnston, W. Va.

# Durham C.&I. Co's Soddy, Tenn., Plant

By Frank E. Mueller *

**Description of a unique washing plant and surface equipment in Tennessee. Different coals, varying greatly in their specific gravity, are treated, and provision is made for handling widely fluctuating tonnages of each. A novel and effective arrangement is in use for "docking" the miners who load impurities.**

*Contract manager, Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

It is the object of this article to describe one of the largest and latest of the numerous improvements that have been contemplated and executed by the Durham Coal & Iron Co., of Chatanooga, Tenn., since the founding of that corporation two years ago.

This concern was organized to purchase the holdings of several joint coal companies in Tennessee and Georgia. The largest acreage is located along Walden's Ridge, from 20 to 35 miles from Chattanooga, north, along the line of the Cincinnati, New Orleans & Texas Pacific Ry., and it is to the Soddy plant, at the town of Rathburn, that this article is devoted.

The Soddy mine is one of the oldest in the state and is well known from the Soddy coal, which bears its name. Here the No. 7 or Soddy seam is mined, the opening being about one and one-quarter miles from the railroad and at an elevation of 1270 ft. above sea level. This coal averages 27 in. in thickness and runs fairly uniform. It is hard and shot from the solid. The impurities which give trouble in the making of coke at this plant, come altogether from the top and bottom and are composed of fireclay, slate and often a bony rash that lies below the coal and shoots up with it. Such impurities, however, are found chiefly in the nut and slack coal and are easily separated in washing. All coke is made from the slack and some nut, the lump and egg being marketed as domestic coal.

The coal from the Soddy mine, prior to the time of the building of the new plant, was handled over an old and inefficient tipple and washer. It was due to market conditions and the need for a lower-ash coke that the new company decided to install an uptodate tipple for preparing more sizes of steam and domestic coal and a more efficient washer to better the coke.

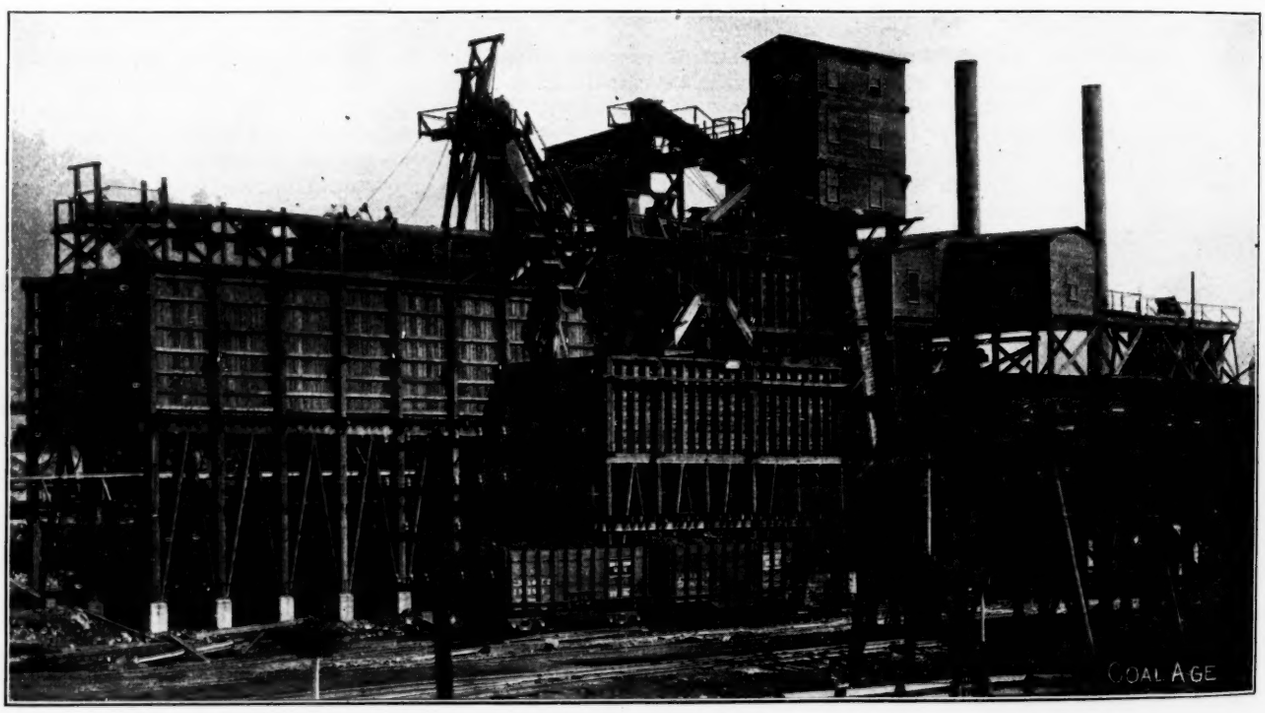
The Soddy tipple handles that coal only, but the washing plant runs not only the nut and slack from Soddy mine, but the same grades from the following mines of the company:

### Different Coals Treated

At Chamberlain Siding, near Rathburn, the No. 7 seam is also worked at the Big Soddy mine, the opening being one mile from the railroad and at an elevation of 1240 ft. above sea level. It averages 32 in. in thickness and is irregular; this coal is hand mined and shot from the solid. The impurities are chiefly a draw slate of 8 in. that comes down with the coal and is difficult to separate.

The No. 2, or Nelson seam, is mined at Sale Creek, about 1½ miles from the main line, the elevation above sea level being 790 ft. This coal averages 42 in. in thickness and runs fairly uniform. It carries two bands of bone, each being about 1¾ in. thick, and it is quite difficult to separate these from the coal as the specific gravity of the two are close together. These bands are quite regular and occur at about 12 in. and 30 in., respectively, from the top. The coal is undercut and shot from the solid. The bone is the principal impurity in the seam, but slate and fireclay are also found in smaller proportions.

At Graysville, the No. 5, or Richland seam, is mined. The opening there is about three miles from the main line of the railroad and at an elevation of 1250 ft. The coal averages 30 in. in thickness, but is irregular; it is quite friable and hand-mined. The principal impurity is a black rash that has never shown any regularity in formation; a shot in a clean face of coal may bring out a large pocket of it. It is sometimes found on the bottom and again at the top, or it may show running diagonally through the face of the seam. Its specific gravity is close to that of the coal, hence it is difficult to wash. Top slate is also to be found,




General View of the Surface Plant at the Soddy Mine of the Durham Coal & Iron Co.

but not in sufficient quantities to cause any trouble in cleaning.

As all of the nut and slack coals from the mines above referred to were to be transported to the Soddy washer for coke making, great care was necessary to design a plant capable of meeting the varying conditions. Soddy nut and slack coal might be coming into the plant from the tipple at all times during the working day, while at the same time coals from either Big Soddy, Sale Creek or Graysville would be unloading and sent through the washer. This condition could not be handled in the old tipple and washer, so the company decided to build an entirely new plant, not only to meet the varying conditions of washing above referred to, but to improve the Soddy tipple as well, and the task was intrusted to the Roberts & Schaefer Co., of Chicago, Illinois.

A careful investigation of the old methods of washing was made, together with analyses of the nut and slack coals from the Soddy and Sale Creek mines which would constitute the bulk of the product going through the plant. It was found that the No. 7 or Soddy seam would give no trouble, but in order to effect a good separation of the Nelson and Richland seam impurities, the jigs would have to be designed with a larger jigging surface, or in other words, to retain the coal in suspension a sufficient length of time to permit, with the proper pulsation, the separation of the coal and rash. To this end a new jig was designed which is shown in the accompanying illustration and which is described in detail further on. It was also found advisable to wash the nut and slack coals separately, not only on account of market conditions and the simplifying of the plant, but in order to effect a thorough separation as well.

### Description of Plant

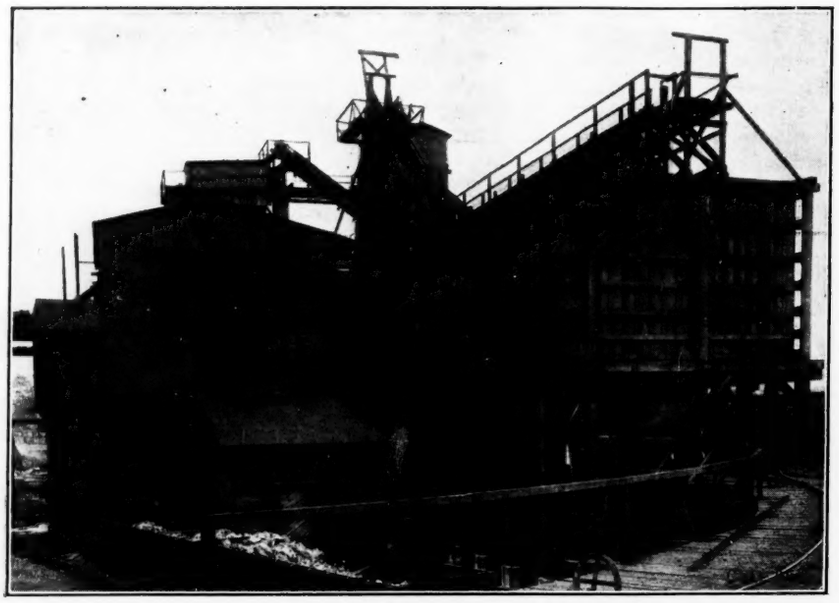
The coal from the Soddy mine is let down to the tipple in trips of 45 cars on to the loaded track, where they are uncoupled and run by gravity to the foot of a car-haul which delivers them to the dump room. If a car looks as if it had been loaded with dirty coal, it is switched off to a track which leads to run-of-mine storage bins and over the latter it is carefully examined, the amount of rock ascertained and the miner docked accordingly. The coal then drops below into the bin, shown in the accompanying view, from which it can be shipped as run-of-mine or delivered into the boiler house through the proper chutes. From the head of the car-haul the cars pass to a cross-over dump, the empties returning by gravity to be made into trips preparatory to returning to the mine, as will be seen in the accompanying halftone.

The coal is discharged from the mine cars into a weigh basket which in turn empties onto a pair of roller shaker screens, the plates of which are perforated and rolled corrugated to facilitate the screening of the coal. These screens, shown herewith, are arranged to load coal on three tracks, lump, egg and slack. Or, the screenings (through 2 in.) can be delivered direct to the elevator of the washer. The screens are also arranged so that a portion of the lump and egg can be diverted to a picking table from which the small amount of impurities can be removed. The cleaned coal is then delivered to a Williams' crusher and after crushing, is elevated in a separate elevator to a 200-ton larry bin for making a special grade of low-ash coke. This coal, without washing, will analyze as low as 5 per cent. ash.

The nut and slack coals from the foreign mines are delivered to the washer in hopper bottom railroad cars. There has been provided, under the slack track of the tipple, a hopper for receiving them and from which they are fed into the same elevator that elevates the nut and slack from the tipple screens. This elevator takes the coal to a flight conveyor, which discharges into a revolving screen fitted with ¾-in. perforations; in this screen the slack is separated from the nut in order to wash each separately.

The nut coal is conveyed from the revolving screen, by means of chutes and telegraphs, into a bin having about 25 tons capacity, which also serves as a local trade bin for the camp. From here it is fed automatically into a Stewart jig, having a capacity of 25 tons per hour. The

Tipple and Trestle Approach, Soddy Mine of the Durham Coal & Iron Co., Rathburn, Tenn.



VIEW FROM TRACK SIDE, SHOWING SCREENS, TIPPLE AND MINE-RUN BINS

washed coal is then sluiced to the nut-coal elevator tank, and elevated from the water to lip screens located over the nut-coal bins, shown in the accompanying illustrations, which serve the purpose of eliminating breakage caused by washing and handling. From the lip screens the nut coal is lowered by telegraphs into a storage bin of 100 tons capacity.

The refuse from the Stewart jig is sluiced to the final refuse elevator tank, from which it is conveyed in a perforated bucket elevator to a 100-ton refuse bin.

### WASHING THE ¾-IN. SLACK

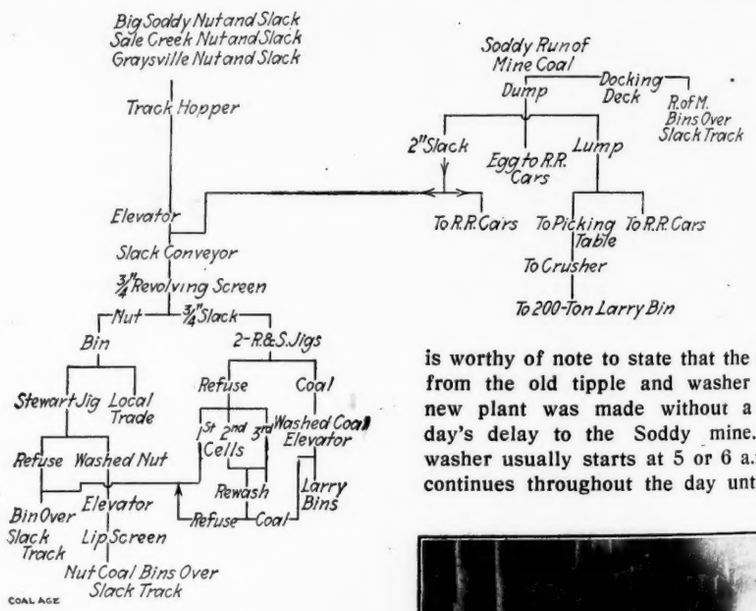
The coal which passes through the ¾-in. perforations of the revolving screen is discharged into storage bins from which it is fed regularly to two Roberts & Schaefer Co's. jigs, shown in the accompanying halftones, each having a capacity of 25 tons per hour and consisting of three cells, giving a total jigging surface of 126 sq.ft. The coal is fed into the first cell, where it is washed primarily, after which it is sluiced to a second and again washed and finally to the third cell for finishing.

Each cell is independent of the other in order to facilitate repairs, and should any one cell be put out of commission, the other two can temporarily handle the product. All plungers of the cells are also arranged to impart a different length of stroke and at a different speed; all shafting is overhead so that the operator has an unobstructed passageway. Each cell is provided with adjustable refuse valves, the first being so graduated that it takes out the bulk of the refuse which, together with the hutch product from the jig screens, is sluiced to the final refuse elevator. The refuse from the second and third cells, together with hutch product, can either be delivered to an independent set of rewashing jigs or rehandled in the same cells, this depending upon the percentage of ash desired in the coke.

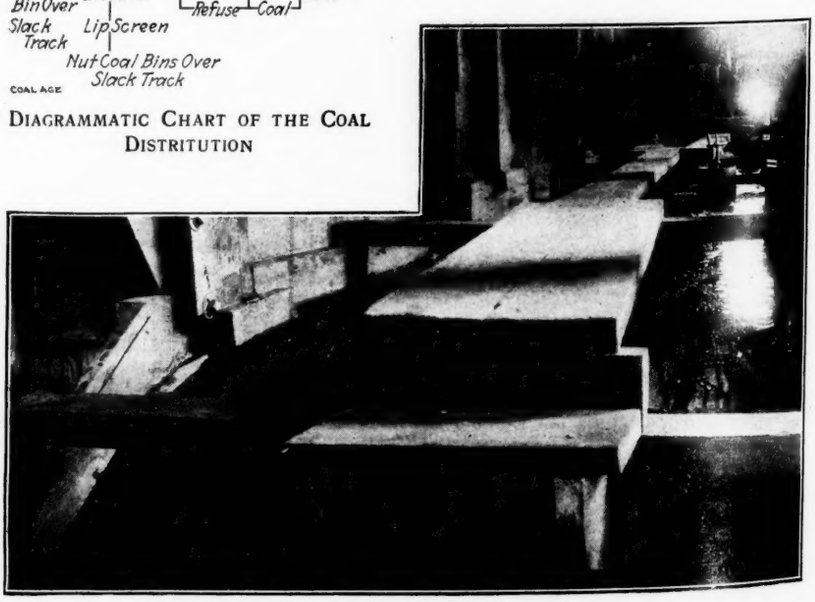
The washed product from the Roberts & Schaefer jigs is sluiced to the washed-coal elevator tank from which it is elevated to a distributing conveyor located over the 800-ton larry bins.

Provision is also made at this plant to mix the washed nut-coal with the washed slack whenever desired, and ample settling tanks for the recovery of the fine sludge and refuse have been provided. This latter is re-elevated and washed, the clean product being mixed with washed slack coal, or with minor additions to the plant, it can be used together with the product from the rewashing jigs as boiler fuel, or again it may be sent to a 100-ton bin, located over the slack track, for shipment.

That the plant is operating successfully can be readily ascertained by an examination of the following analyses, and it is worthy of note to state that the change from the old tipple and washer to the new plant was made without a single day's delay to the Soddy mine. The washer usually starts at 5 or 6 a.m. and continues throughout the day until 6 or




DIAGRAMMATIC CHART OF THE COAL DISTRITUTION



VIEW OF THE ROBERTS AND SCHAEFER JIGS

7 p.m., all depending on the amount of foreign coal on hand.

ANALYSES OF SODDY AND SALE CREEK COALS MIXED

| | Ash % |
|---|---|
| Unwashed ¾-in. slack coal | 21.30 |
| Washed slack coal | 10.95 |
| Refuse, final (includes nut refuse) | 58.15 |
| Unwashed nut coal | 20.33 |
| Washed nut coal | 9.85 |
| Refuse nut coal | 58.28 |

Percentage of rejections approximately 25%. Refuse has analyzed 5.05% float on a 1.45 sp.gr. solution, having given an ash analysis of 10.35%.

As a comparison it may be of interest to give some of the analyses upon which the selection of the types of jigs were based:

Soddy nut above ½-in.

| | | | |
|---|---|---|---|
| Float, 1.45 Sp. Gr. | 77% | Ash | 6.80 |
| Sink 1.45 Sp. Gr. | 23% | Ash | 67.20 |
| | 100 | | |

Soddy slack below ½-in.

| | | | |
|---|---|---|---|
| Float, 1.45 Sp. Gr. | 82% | Ash | 7.68 |
| Sink, 1.45 Sp. Gr. | 12% | Ash | 62.85 |
| | 100 | | |

Sale Creek nut above ½-in.

| | | | |
|---|---|---|---|
| Float, 1.45 Sp. Gr. | 61% | Ash | 9.11 |
| Sink, 1.45 Sp. Gr. | 39% | Ash | 57.00 |
| | 100 | | |

Sale Creek slack below ½-in.

| | | | |
|---|---|---|---|
| Float, 1.45 Sp. Gr. | 75% | Ash | 9.80 |
| Sink, 1.45 Sp. Gr. | 25% | Ash | 57.50 |
| | 100 | | |

Allowing for errors in sampling, variation in the size of coal and changes in mining conditions, the above results are exceptionally good and are indicative of the thorough manner in which the management of the Durham Coal & Iron Co. investigate and care for all of their plants.

Timber should never be thrown off or allowed to lie along the sides of a road where drivers have to run, as this is a common source of accidents.

## Nationalization of Mines and Minerals

The Miners' Federation of Great Britain has determined to press the question of the nationalization of mines and minerals, and at the annual conference at Swansea a bill drafted with this end in view was approved in committee. It was decided at that meeting to ask the Labor party to adopt the proposed scheme at its annual Congress, to be held in January next.

Even admitting the possibility that the labor party will accept nationalization as part of their program, it is not quite clear how the miners can carry the country with them. The terms of their bill having been made public, it may, however, be interesting to see what is contained in the proposals of the leaders of the British miners, who, it may be mentioned, in parenthesis, are not satisfied with the results of the Eight Hours' Act or the Minimum Wage, now that they have these measures in operation.

1. The first proposal is to set up a Ministry of Mines, in control of a government official, who is to receive a salary of $10,000 per annum.

2. When this bill becomes law, all collieries and coal mines, shafts, levels and inclined places in course of being made or driven; all patent fuel plants, coke ovens, coal washeries, railway rolling stock and other colliery appliances, together with the houses owned by the colliery companies and occupied by miners, will be vested in and held by the Minister for Mines in his corporate capacity for his official use and for that of his successors.

3. This clause proposes that the Minister for Mines shall purchase the coal mines "at a price and in the manner provided by the act, provided always that the value of any minerals or right to work minerals or mineral wayleaves (rights of way), other than a surface wayleave shall not be taken into account in computing such price, for all of which no compensation shall be paid."

4. This clause provides for the appointment of Mines Commissioners for the purpose of assessing the purchase price of coal mines, the number of commissioners, apparently, to be eight with a chairman, who is to be named by the king.

5. Clauses 5 and 6 relate to the valuation of the coal mines and the ascertainment of purchase. The equipment and machinery it is proposed to purchase by valuation, with a maximum purchase price on the following basis: When 100,000 tons or less have been raised per annum, $3 per ton; when more than 100,000 tons have been raised $2.50 per ton.

6. The 7th clause provides for the payment of the purchase price in guaranteed 3 per cent. coal-mine stock, the stock to be redeemable after three months' notice at par.

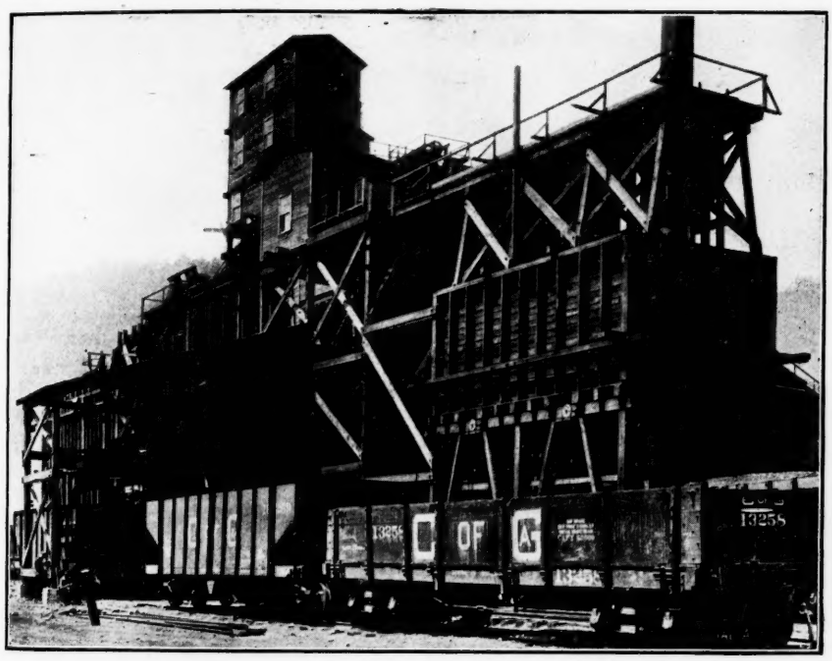
7. Clause 8 reads: "Subject to the provisions of this act, it shall be lawful for the Minister for Mines on behalf of His Majesty, to open and work coal mines, and generally to carry on the business of coal mining in all its branches, together with all other industries usually carried on in connection therewith, provided that it shall not be lawful for the Minister for Mines to lease any mine or mines to any person."

8. Passing to Clause 11, "there shall be transferred to the Minister for Mines all the existing assets and liabilities of coal undertakings other than liabilities for royalty rents, wayleave rents, or any other underground rents or charges payable or due, at the time of the passing of the act, to any person."

9. Under clause 15 it is proposed to allow miners' unions to participate in politics, and "it shall be lawful for any person employed under this act to participate in any civil or political action in like manner as if such person were not employed by His Majesty."

10. Clause 17 relates to the duty of the Minister for Mines to supply coal, and makes the private sale of coal unlawful.

There are 19 clauses in the bill, but the foregoing are the more important proposals. While it is possible that the Miners' Federation may move to make the nationalization of mines one of the deciding factors at the next general election, it is not conceivable that either of the two great parties in the country will accept the bait and court inevitable disaster at the polls. Nothing short of a national upheaval could convert public opinion to the miners' views.



MAIN WASHER BUILDING, LARRY BINS AND ENGINE ROOM

# Sketches of the Editors

**Being a Brief Record of the Lives of Those Now Serving on the Editorial Staff of Coal Age.**

We know full well that the horsepower of a man is not measured by his exhaust. We are also aware that the superior wisdom of an editorial staff is not definitely evidenced by a lengthy recital of exaggerated engineering exploits. Those of us who are now laboring to produce a satisfactory weekly paper for the fuel industries lay no claim to par-excellence as coal engineers, and only desire to be regarded as ordinary individuals of the common garden-variety class, having an intimate acquaintance with coal mining and a fair understanding of the problems encountered.

Let it be understood also that the editors of any journal are only a medium in the direct employ of the readers. In a technical paper like COAL AGE, the character and value of the material published are almost entirely dependent on the interest shown by the best talent in the industry represented.

The following sketches are published in answer to many inquiries, and we hope they will bring us in still closer contact with our subscribers.

FLOYD W. PARSONS

### FLOYD W. PARSONS

Floyd W. Parsons is a native of West Virginia. His early education was obtained first at the university of his home state and later at Lehigh University in Pennsylvania, from which latter institution he secured the degree E. M. (Engineer of Mines).

Following his graduation, Mr. Parsons secured employment as mining engineer for the Stonewall Coal Co., in the New River field of West Virginia. Some time was spent here in opening up two new mines. Finding that there was no one from whom he might learn the practical end of coal-mine engineering in the position he then held, he resigned his job as chief engineer to accept a place as backsight on the engineering corps of the Lehigh Valley Coal Co. in the northern anthracite field of Pennsylvania.

During his stay with the L. V. C. Co. in Wilkes-Barre, he served in the various subordinate positions on the engineering corps, and was later made district engineer, doing surveying work in the mines about Pittston. He left the Lehigh Valley Co. to accept a place as assistant engineer with the Fairmont Coal Co., of West Virginia. When this latter concern was absorbed by the Consolidation Coal Co., of Maryland, he was transferred to the Maryland division, making his headquarters at Frostburg.

Mr. Parsons left the Consolidation Co. to become chief engineer of the New River Collieries Co. in West Virginia, and served this latter concern until he was appointed instructor in mining at the Michigan College of Mines, Houghton, Mich.

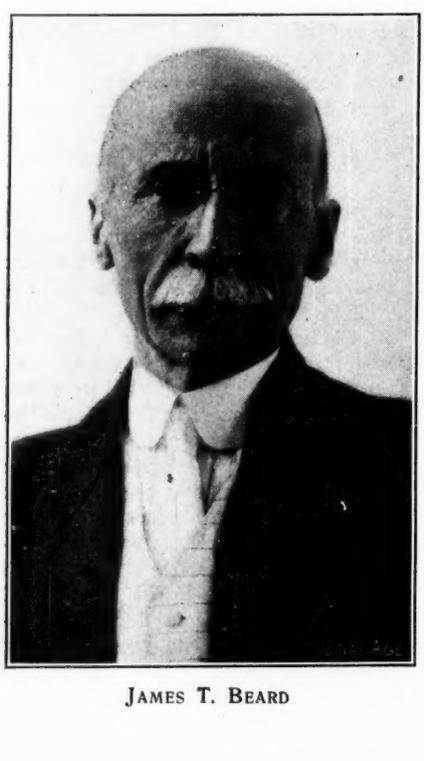
The following year he went back into practical work again, having accepted the place of chief engineer for the Victor-American Fuel Co., Denver, Colo. Through writing several articles for technical papers Mr. Parsons became interested in editorial work, and later accepted a position as associate editor for *The Engineering and Mining Journal*. When COAL AGE was started he was made editor of the new paper.

He is a member of the Mining and Metallurgical Society of America and several other engineering and coal institutes.

### J. T. BEARD

J. T. Beard graduated from Adelphi Academy in Brooklyn, finishing his education at Columbia University of New York, where he received the degrees C. E. and E. M. His first position was that of assistant engineer engaged in the construction of the Brooklyn Bridge, which structure was famous for being the greatest work of its kind until recent years. His next position was that of assistant city engineer for Brooklyn in 1880.

Leaving his native East, Mr. Beard went west to become division engineer of the Chicago, Burlington & Quincy Railroad. He left this place to be superintendent of the Smoky Hollow Coal Co., Avery, Iowa. The following year (1883) he was appointed assistant U. S. Deputy



JAMES T. BEARD

R. DAWSON HALL

Mineral Surveyor, at Aspen, Colo. This work lasted two years, when he returned to Iowa accepting a place as mining engineer in charge of mine development and construction work for the Ottumwa Fuel Co., Ottumwa, Iowa.

A little later Mr. Beard was appointed secretary and engineer of the first State Board of Examiners for Mine Inspectors, at Des Moines, Iowa. Following this he was proprietor of the Iowa Mining Exchange, which work he gave up in 1896 to become principal of the School of Coal Mining, International Correspondence Schools, Scranton, Pennsylvania. He served the I. C. S. people 16 years, at the same time acting as associate editor of *Mines and Minerals*. He came to New York in the fall of 1911 as Associate Editor of COAL AGE.

A. T. SHURICK

Mr. Beard is a member of the American Institute of Mining Engineers, the North of England Institute of Mining and Mechanical Engineers, the Mining and Metallurgical Society of America, the Mine Inspectors' Institute of America and a number of other local mining institutes. He is a Fellow of the American Association for the Advancement of Science and is author of the following books: Ventilation of Mines, Mine Gases and Explosions, Design of Centrifugal Ventilators, Blasting Manual and Detection of Small Percentages of Gas by the Safety Lamp.

He invented the Beard-Mackie sight indicator for gas, the American Beard deputy safety lamp, and the Beard-Stine centrifugal mine fan. At the present time he is consulting engineer for the S. B. Stine Co. in Pennsylvania and the American Safety Lamp & Mine Supply Co., of Scranton.

R. DAWSON HALL

R. Dawson Hall was born in England, receiving his early education in a private school at Lancing, in Sussex County. He later attended the University College School in London for four years, after which he matriculated at London University. Following this Mr. Hall attended University College, winning the Junior Gilchrist Scholarship and being educated in the expectation of becoming a civil engineer.

He came to the United States in 1892 and entered the employ of a fellow countryman, Alfred Herdman of Ridgway, Elk County, Pennsylvania, who was then engineer for the Shawmut interests. On the resignation of Mr. Herdman, Mr. Hall succeeded him as chief engineer of the same company, which concern at that time was both small and approaching insolvency.

Shortly after this, when a reorganization was effected, the Shawmut interests that he was serving extended their activities and became an important factor in the coal business of central Pennsylvania. He continued with these same people until 1901, acting part of the time as chief engineer, and the remainder as division superintendent.

Early in 1901 Mr. Hall resigned and moved to Du Bois, Penn., opening an office as consulting engineer. He continued at this work until 1911, when he came to New York as associate editor of COAL AGE.

During the years he acted as an independent engineer, Mr. Hall contributed many articles relating to coal mining to various technical papers.

A. T. SHURICK

A. T. Shurick received his early education at the Virginia Polytechnic Institute, Blacksburg, Virginia. His first position was in the engineering department of the Manhattan Elevated Railway, New York City, working on the construction of the central power station for the entire system. His next position was in the maintenance of way department of the New York Central & Hudson River Railroad.

Leaving New York, Mr. Shurick went to Oklahoma (then the Indian Territory) as an assistant in the construction department of the McAlester Coal Co., which concern was later taken over by the Rock Island Coal Co. He entered the mining department some months later, and at the end of two years was in charge of all mine surveys.

He resigned from the Rock Island Co. to accept a place as division engineer for the Mexican Coal & Coke Co., at Las Esperanzas, Coahuila, Mexico, and remained with the Mexican concern until he was engaged as engineer of coal properties for the Amalgamated Copper Co. in the Northwest. He occupied this latter position six years, coming to New York in 1911 to serve as associate editor on COAL AGE.

FRANK H. KNEELAND

Frank H. Kneeland graduated from the University of Illinois in 1904, receiving the degree of B.S. in mechanical engineering. He immediately accepted the position as city engineer for the town of Dwight, Ill., which at that time was beginning the work of paving its streets. In September, 1904, he took a position as subforeman with Westinghouse, Church, Kerr & Co., and was engaged on the construction of the Detroit-Edison pant, at Delray, Michigan.

On leaving the W. C. K. people, Mr. Kneeland went with the Stirling Co. of Barberton, Ohio (now Babcock & Wilcox), as an erector. He remained with this concern two years, putting up boilers in many states east of the Mississippi, as well as in Brazil, South America. He resigned from the Stirling company to accept a place as mechanical superintendent of the Wabana mines with the Dominion Iron & Steel Co., in Newfoundland.

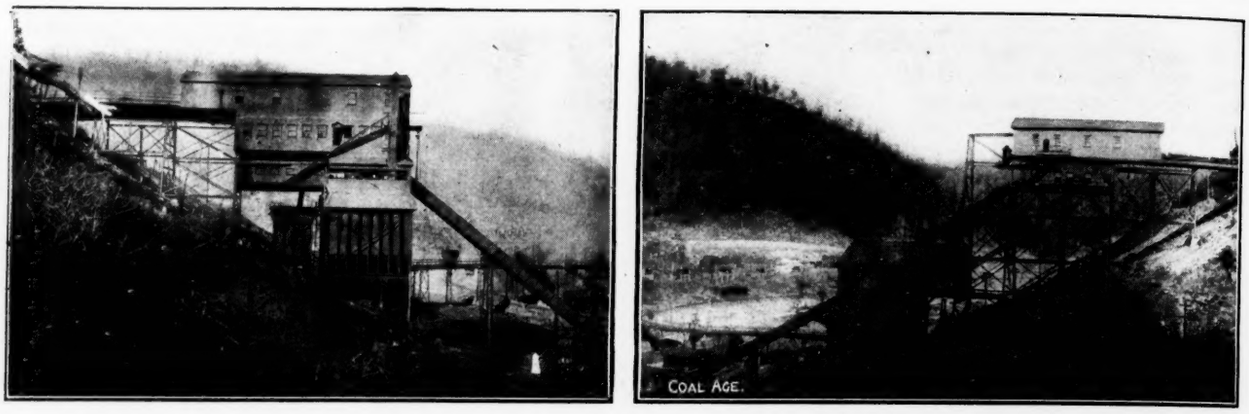
F. H. KNEELAND

In the fall of 1908 he returned to the United States, accepting a position as mechanical engineer of the United States Coal & Coke Co., at Gary, W. Va., which he held until becoming an associate editor on the staff of COAL AGE, in September of the present year.

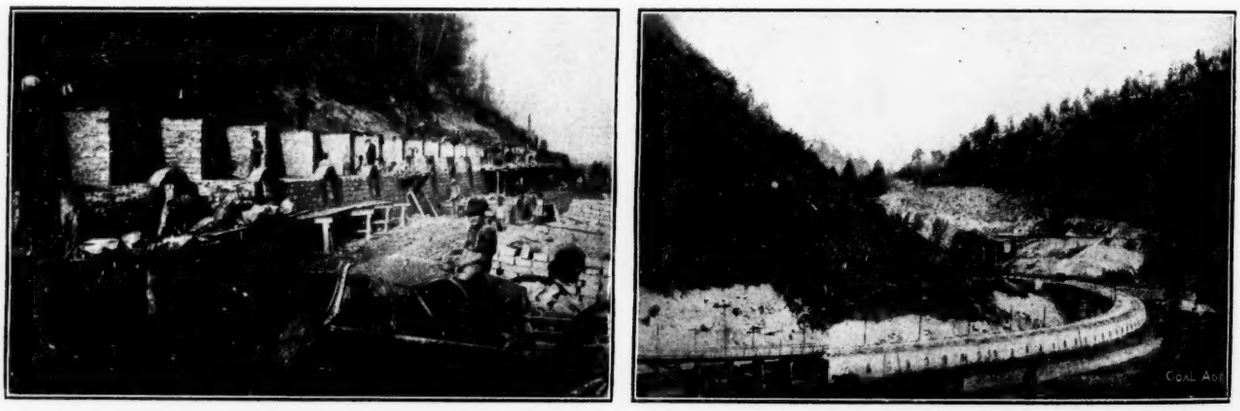
While in the employ of the U. S. Coal & Coke Co., which concern is a subsidiary of the Steel Corporation, Mr. Kneeland had an extended experience as trouble finder, which work has given him a thorough grounding in the use of coal-handling machinery.

# Snap Shots in Coal Mining

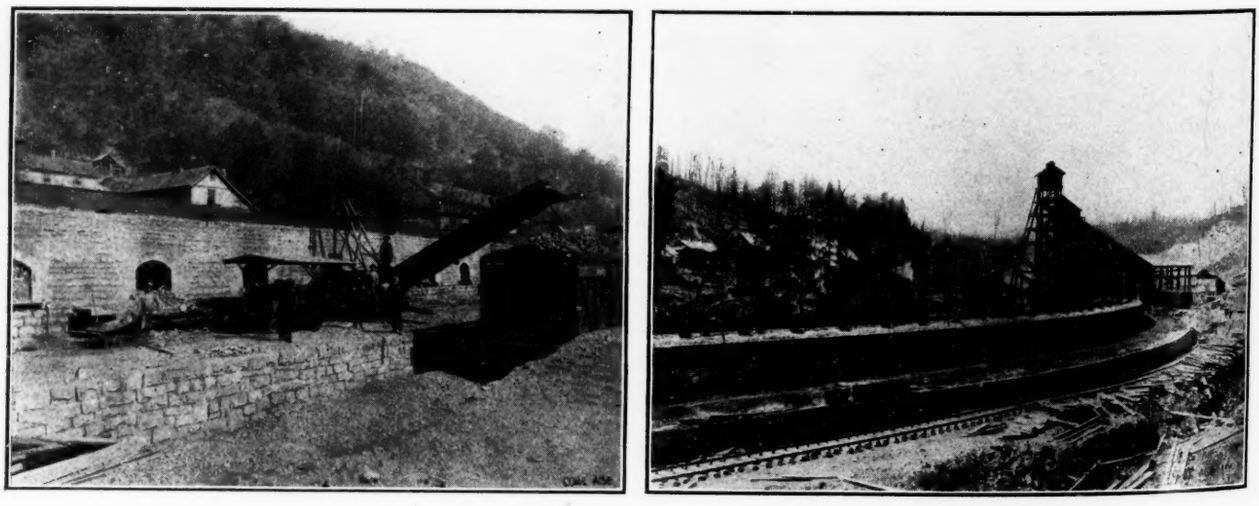
**Miscellaneous Views of General Interest and Technical Value to Colliery Men.**




STEEL CONSTRUCTION IS USED IN TIPPLES AND BINS AT MANY WEST VIRGINIA MINES. ABOVE PLANTS BELONG TO U. S. COAL & COKE CO., AT GARY



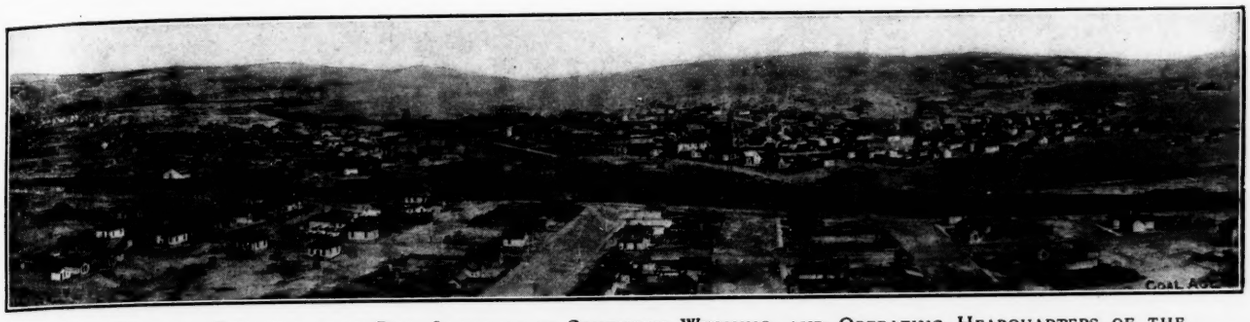
SOME COMPANIES STILL ADHERE TO THE OLD TYPE BEEHIVE OVEN



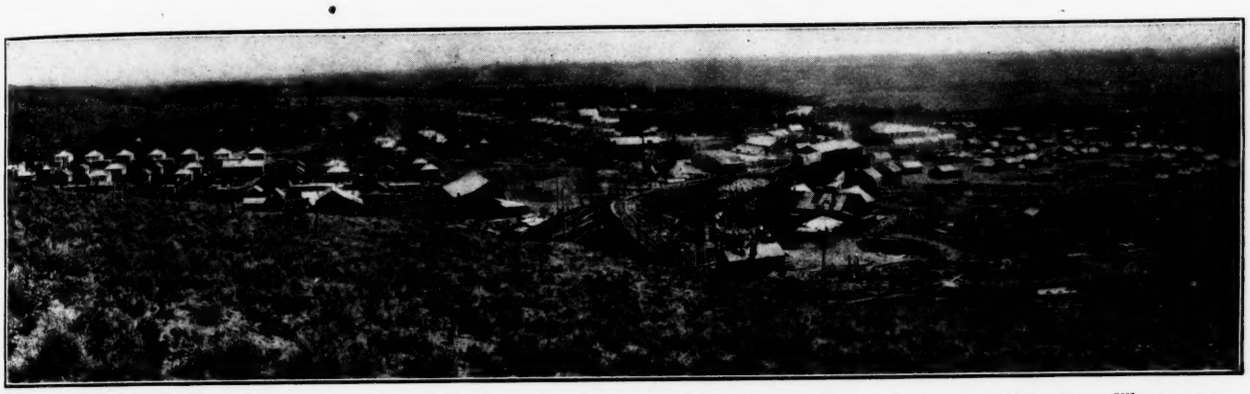
COKE OVENS AND LOADING MACHINE AT RUSH RUN COLLIERY

COKE OVENS AT SUN NO. 2 MINE, NEW RIVER COLLIERIES CO.

IN THE NEW RIVER FIELD OF WEST VIRGINIA



ROCK SPRINGS, CENTER OF THE COAL INDUSTRY IN SOUTHERN WYOMING, AND OPERATING HEADQUARTERS OF THE U. P. COAL CO.



TOWN OF DIETZ AND MINES OF SHERIDAN COAL CO., AN IMPORTANT COAL-PRODUCING CENTER IN NORTHERN WYOMING

VIEWS OF A EUROPEAN RETORT-OVEN INSTALLATION, SHOWING QUENCHING PROCESS

**Coal Age offers a prize of $5 each week for the best photograph sent to us by any subscriber. Prints submitted must be for the exclusive use of Coal Age, and must not have been previously published. All photographs not awarded the first prize, but accepted for publication, will be paid for at a liberal space rate. Sender's name and address, with brief description of the picture, must accompany the photograph. All prints returned, if desired.**

# Current Coal Literature

**The Best Thought Culled from Contemporary Technical Journals, Domestic and Foreign**

## Mine Telephones

Sidney F. Walker, in the *Engineering and Mining Journal,* makes the following remarks on mine telephones and the importance of careful installation. The use of telephones in underground work is becoming general in mines throughout the world and where properly installed good results are obtained.

"The principal trouble involved in the use of electrical apparatus in mines, arises from the fact that mines generally carry an extraordinary quantity of water. Electric motors have a much better chance of continuing to work than electric signals and telephones, because the wires employed in their construction are so much larger, that water does not easily attack them.

### Perfect Insulation Possible

"The great evil to be feared in connection with motors underground in metalliferous mines is the destruction of the insulation. Evidently from the experience in the Rand mines, which were flooded during the war, it is possible to guard against that by suitable construction. In the manufacture of electrical apparatus care is now taken to abstract all moisture and air, from the insulating materials employed, and to impregnate them thoroughly with insulating varnish. If the varnish is properly applied, and is thoroughly baked after application, insulation troubles in metalliferous mines are minimized.

### How the Connections Are Protected

"With telephones and electric signals the chief difficulty is in the corrosion of the connections, and of the screws employed to act as terminals of the leading wires, etc. In telephones, the induction coils are necessarily wound with fine wires, say No. 30 standard wire gage and smaller. The smallest drop of water upon the screw, under which the end of one of the wires from an induction coil is clamped, will cause the connection to be destroyed in a short time.

"In modern telephonic apparatus, the difficulty is overcome by carrying a larger wire for connecting purposes inside the body of the spool upon which the induction coil is wound and hermetically sealing up the whole apparatus, in somewhat the same manner as with armature coils and field magnets of dynamos. The same danger arises with the wires forming the coils of electric bells used in signals; and it is to be overcome to a certain extent in the same manner.

### Wires Not Strips Are Best

"The telephone has a number of connections inside the case which contains the transmitter, switches, and usually the receiver also, in modern practice. If these connecting wires are small, they will easily be parted. In modern telephonic apparatus intended for mining work, all the connecting wires are made of No. 16 gage wire or larger.

"The trouble is not cured by using strips of brass or copper, because these expose larger surfaces to the electrochemical action which commences whenever water is deposited upon them. The best results are obtained by solid wires of ordinary section, exposing as small surface as possible for a given strength. The larger wires are not so likely to be corroded and broken, in case water is deposited upon them.

### The Air-tight Box

"Further protection is afforded by inclosing everything within a metallic case, consisting of a single casting and a cover plate, the joint between the body of the case and the cover being formed by wide flanges, carefully machined. Careful machine work and a wide flange are the two secrets of success in this matter.

"I have found that when moisture is present in the atmosphere where an electrical apparatus is fixed, it is difficult to keep it out. Water vapor will find its way through the smallest aperture between the cover and the telephone box, or through the opening made when a signal button is pressed.

"In modern telephonic apparatus, the telephone receivers are fixed on the inside of the containing box, the ear receivers being only acoustic tubes. Great care should be taken to make the joint between the receiver and the box perfectly water-tight. I have found that wherever possible, it is wise to have the connecting screws for the leading wires on the outside of the containing box so they can be seen and quickly cleaned.

"The terminal screws should be made large, so as to present plenty of surface, and the wires employed for connections between the bells, pushes, etc., should be as large as possible, to withstand for a longer time the effect of electrochemical action due to the presence of moisture,

### Keeping the Telephone Box Warm

"The method described by L. H. Eddy,[1] by which a 4-cp. lamp was inclosed inside the telephone box, strikes me as a good one; but where heat is applied in that manner, there should be provision for ventilation to carry off the moisture; otherwise there will be danger of the vapor merely being removed from one part of the apparatus to another."

## Another View of the Election of Mine Inspectors

The *Wilkes-Barre Record* has always advocated the vicious legislation which has made the office of inspector elective. Without approving its argument we quote the *Record* as follows: "The question whether the mine commission will recommend that mine inspectors be elected by the people or be appointed by the governor depends on the vote of one member of the committee—Representative Jones of Susquehanna County.

"James E. Roderick, chief of the State Department of Mines, is behind the agitation for a change. He has advocated it in his annual reports and has pressed it upon the committee of which he is a member. Mr. Roderick has taken advantage of the fact that, in some of the districts, there is much dissatisfaction with the old method and he has advocated a plan which would place the choice of mine inspectors completely into the hands of the machine politicians.

"The duty of Representative Jones is clear. Unless he decides to consent to the prostitution of mining affairs by the corporation interests he will come out emphatically against the proposed change. The plan is to have the governor appoint all the mine inspectors of the state from an eligible list compiled as a result of an examination, to be conducted under state auspices.

"We know what examinations are when political influences dominate them. We can easily foresee what the nature of the appointments would be, in all probability, if made by a Governor in sympathy with the corporation interests. If the proposed change is made, it will be one of the most reactionary yet inflicted upon the mining interests of the commonwealth.

"The power of appointing the examining boards now rests upon the judges. Those candidates who attain a certain

[1]Eng. and Min. Journ., June 8, 1912.

percentage in the examinations are eligible to go before the people for election. The kick raised against the system in some quarters is that the judges appoint examining boards which do not conduct honest examinations.

"The complaint is apparently well founded. By this method, as well as by the one suggested, corporation favorites can be given charge of the mines in such measure as their authority under the law permits. But there is more hope in the present system than in the one proposed.

"The attempt to tighten the hold of the corporations upon the inspection system should be frustrated. Representative Jones will defy what is practically the unanimous sentiment in the mining region if he gives his support to the change."

## The German System of Compensation

In a book on "Accident Prevention and Relief" by Ferd. C. Schwedtmann and James A. Emery published by the National Association of Manufacturers of the United States the following description of the attitude of Germans to accident compensation appears.

Dr. Neisser, chief counsel for the League of the German Employers' Accident Insurance Associations states that the German system of compensation rests on four principles:

HE WHO CREATES A DANGEROUS CONDITION IS LIABLE FOR ITS EFFECTS

1. It proceeds from the assumption that he who creates an enterprise, that peculiar structure of human beings, things and forces, and induces men to labor amongst arms of steel, moving at high speed, establishes a source of danger and becomes responsible for the damage arising from this source. Under this theory the *employers' fault need not be proven.* The fact that injury has been caused establishes claim for compensation.

INDIVIDUAL RESPONSIBILITY INADEQUATE

2. Convinced that in many cases the resources of the individual employer would not prove equal to the enormously increased liability, and that therefore the existence of the employer as well as compensation of the injured worker would be jeopardized, *individual* responsibility is eliminated and in its place is put the *collective* responsibility of the industry.

COLLECTIVE RESPONSIBILITY REQUIRED BY LAW

3. To carry out this idea, large industries, and, later on commerce and crafts, or small industries, were organized into employers' associations grouped according to callings. Thus legally incorporated, self-governing bodies were formed and each and every employer was *compelled by law* to join.

The miller must join the Millers' Employers' Association; the teamster, the Employers' Teaming Association, etc. Upon these organizations was placed the responsibility of carrying and administering the accident compensation system, and to this end they were invested with far-reaching legal powers for enforcing their rules and for raising money, etc.

PREVENTIVE MEASURES UNDER COLLECTIVE CONTROL

4. Accident prevention being of greater importance and larger social value than compensation, was also placed in the hands of these employers' associations, with the necessary legal authority for enforcement.

The first two principles, we observe, define liability, the third is one of administration, while the last links the compensation and prevention of accident.

## The Foreign Industrial

The *North American* thus reviews Peter Roberts' recent work, "The New Immigration" (Macmillans):

"The author knows his subject—he was a Welsh miner in youth, studied divinity at Yale, was later a pastor in the anthracite region, and is now engaged in promoting a system for practical instruction of aliens in the American language and customs. At this time many thousands of foreigners are studying English under the Roberts' system, in which no books nor knowledge by the teacher of any speech but English are required.

"Three-fourths of our immigration comes from southeastern Europe. There are many books describing these alien immigrants in the home land, their coming to America and the difficulties they encounter before they reach their destination; but few are the writers who have attempted to give a picture of the immigrants of the last 30 years at work, in their homes and in their social life.

"A knowledge of economic conditions and of society in the countries from which our immigrants come is important; but the way in which they are treated when they enter, the part they play in the industries of the United States, the way they live in American cities, the manner in which they are treated by the native-born and what all this means to America is of far greater importance. Of these latter things, Mr. Roberts writes in his new book.

"These ignorant men are coming here in droves, incited by wild tales of speculative agents or inspired by some dim hope of betterment. It is for the native-born, says Mr. Roberts, to raise them out of the ruts of ignorance, antisocial habits and superstition in which they are inclined to stay. Neglect means permanent lowering of national spirit and social standards.

The author says:

> Wherever the native-born rest supinely, looking to state or federal government for relief from the ills precipitated by foreigners, their expectations will not be fulfilled, and the ills they bemoan will grow more intense. Foreigners in American cities will not throw off the slough of medieval civilization unless the native-born will help them.
>
> We are a young nation; no prophet has dared to predict the possibilities of the future; but the past industrial development of America points unerringly to Europe as the source whence our future unskilled labor supply is to be drawn. The gates will not be closed; the wheels of industry will not retard; America is in the race for the markets of the world; its call for workers will not cease.
>
> Confronted by these conditions, is it not the duty of the government to deal generously and justly by those who answer the call; and should not every industrial community adopt some definite plan for constructive work to raise the standard of the new immigration and to speed on the process of assimilation.

"Upon this chord the author harps constantly, iterating and reiterating palpable, self-evident, yet mighty unpleasant truths as his argument and explication continue. This volume of Roberts' is a valuable handbook for the new library of political science, which every student of public affairs is hastening to accumulate."

## Shooting Off the Solid

Much has been said and written in condemnation of the practice, too prevalent in some of the coal-mining states, of "shooting off the solid"—that is, of blasting down the coal without having previously undercut or sheared it, thus "making the powder do the work." According to Edward W. Parker, the coal statistician of the U. S. Geological Survey, all authorities agree that the practice is reprehensible in the highest degree. The heavy charges of powder produce an unnecessary quantity of fine coal and render the lump coal so friable that it disintegrates in handling and transportation. The quantity and quality of the merchantable product are thereby materially reduced.

These reasons in themselves are sufficient to call forth the condemnation of the practice and the demand for its abolition, but a far stronger reason is the increased liability to accident in a vocation that is hazardous enough when all precautions possible are taken to promote safety. The use of inordinate charges of powder weakens the roof and supporting pillars and failure to undercut or shear the coal increases the danger of windy shots, the cause of frequent dust explosions.

Falls of coal and roof in 1911 caused almost one-half of the 2700 deaths in the coal mines of the United States, and explosions caused 14 per

cent. The deaths from the more prolific cause, however, usually happen singly and are not reported outside of the localities where the accidents occur, whereas the less frequent explosions involving the deaths of tens or hundreds of men are given prominence in the daily and technical press.

## The English Compensation Act

The investigators, Schwedtman and Emery, appointed by the National Association of Manufacturers do not speak favorably of the English system of compensation, though it has two merits, which will appeal to the people of the United States in framing such laws.

These are that each operator bears only the hazards of his own mine, be these great or small, and that each mine owner suffers from his own neglect of safety and the negligence of the men he employs and not from the indifference to safety of other operators and their employees.

### Discrimination against the Infirm and Elderly

However, the points made by the authors mentioned, in their book on "Accident Prevention and Relief" are well taken:

"Great Britain by making each employer accept the obligation of one who insures only a limited number of persons, gives him none of the equalizing advantages which accompany the taking of a large number of risks. He carries the risk without knowing the premium and is thus forced to regard each employee as a hazard, a circumstance which has wrought unspeakable hardship upon elderly and defective workmen.

"To this unhappy condition public attention was called by the report of the Departmental Committee in 1904, and a remedy was suggested, but, like other recommendations of that committee, it remained unnoticed. This distressing situation led Sir Edward Brabrook, late Chief Registrar of Friendly Societies, a man of long experience and high official position in the administration of the act of 1897, to denounce what he termed 'the horrors' of the act, in the address which he delivered to the International Conference on Social Insurance at The Hague in September, 1910.

### Compensation Acts Fill the Poor Houses

"Dr. Collie, medical referee of the English Home Office, at the same time and place, quoted the opinion of the Local Government Board Inspector, 'that the Workmen's Compensation Act has done more than anything else in recent years to force men between fifty and seventy years of age into the poor house.'

The Poor Law Commission confirms this opinion by a similar finding in its annual report for 1909. Yet these unfortunate consequences seem inevitably associated with raising individual liability to an extreme point, for the employer, whatever his sympathies, is forced into the situation where he must retain the services of elderly and defective men at an enhanced premium, or pitilessly supplant them with younger men, representing diminished risk and proportionate reduction of overhead expense.

"English experience seems to suggest that this result can be avoided in any application of the compensation principle only by eliminating personal liability and substituting for it, contribution to a solvent insurance fund.

### Liability for Disease

"Avowedly intended to provide compensation for accident, the act has in fact made the employer by decision liable for disease, for the English cases make it apparent that compensation is frequently paid for accidents actually due not to work, but to the physical state of the workman. The act has thus overshot its mark and covered a field greater than its purpose.

"Can a measure of this nature be a proper model for the imitation of our states? We are dissatisfied with the waste and bitterness which follow in the wake of litigation, but this act neither stems waste, removes elements of personal antagonism nor prevents resort to the courts. We desire a single liability. If we imitated the terms of the act we should find ourselves possessed of three methods of legal controversy."

## Weathering of Coal in the Seam

By H. C. Porter

Shortly after the entries had been driven to 600 ft. at the experimental mine at Pittsburgh, Penn., a series of samples of coal was taken beginning at the outcrop and at short intervals toward the interior. These samples were stripped from the entire thickness of the seam in the usual manner, rejecting first the outside layer of 3 to 4 inches.

The analyses of these samples on ash and moisture-free basis show abnormally low carbon and high oxygen for a distance of 35 to 40 ft. from the outcrop. Beyond that point there is little variation.

A few samples compared on the basis of inflammability of the artificially prepared dust, show almost no difference between the coal at 50 ft. and at 600 ft. But the coal at 1 ft. from the outcrop is much less inflammable, even after allowance is made for its high percentage of ash.

Three samples were compared also for their rates of absorption of oxygen in closed containers and for their rates of liberation of methane. In both respects the 50-ft. and 600-ft. samples show little difference between themselves, while the outcrop sample shows a much lower rate.

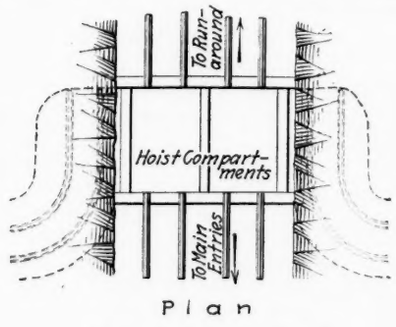
These results do not apply necessarily to the weathering of dust, but show that the alteration of this coal by long continued weathering, as it has lain in the seam under the conditions of cover, etc., prevailing, has not materially affected the chemical character of the coal for a distance greater than 40 to 50 ft. from the outcrop.

## An Economical Sump Arrangement

By Frank D. Stewart*

The following scheme for eliminating the loss of time and the cost attendant upon the necessary monthly cleaning of a shaft sump was suggested by U. S. Parish, superintendent of the Knox Coal Co., situated at Bicknell, Indiana.

The shaft, instead of being continued straight on down to the necessary depth




Sketch of Sump Arrangement

below the coal, for the seating of the cage and the accumulation of the water and coal, is sunk on an incline, as shown on the accompanying sketch. The bottom of the sump on each side of the shaft is then connected by a short tunnel to the run-around, and a track laid down this slope so that a car may be run into the sump to catch the coal. The car, when full, is then hauled out and no shoveling in the drip from the shaft is necessary.

The slope of the bottom of the shaft may be lined with either concrete or sheet-steel plates, the concrete being

*Mining engineer, Bicknell, Ind.

given the preference because it is not affected by the action of the mine water. The lining is then covered with old rails, laid close together so as to take the impact of the falling coal and prevent a wearing away of the concrete. The rails should be extended far enough into the sump so they will act as a chute and run the material directly into the car. Most of the water will thus run out between the rails without going over the coal in the car, and that which does find its way into the car will drain out, leaving the coal in such shape that it may be hoisted and shipped or used at the mine.

With the sump directly under the shaft, all the coal that falls back soon becomes useless from the action of the sulphur in the water. Add to the loss of coal, the time and labor involved in cleaning the sump and the above described arrangement will soon pay for itself many times over. For example, at the Knox mine, mentioned above, the cost of cleaning the ordinary sump is in the neighborhood of $600 per annum.

## The Coral Explosions

A series of three unimportant explosions resulting from a small mine fire, have occurred recently at the mines of the Wharton Coal Co., at Coral, Indiana County, Penn.

In the last, one man was killed and ten injured. It appears that there has been a fire at the mine and Superintendent William Ramsay has been endeavoring to extinguish it. On the 14th, Saturday, the place where the fire was supposed to have been most severe, was visited by David T. Price and William A. Raudenbusch, of the mine-rescue department, of the Bureau of Mines.

They took a canary bird with them, and by its action on exposure, were not able to detect the presence of carbon monoxide, nor did their lamps indicate that any methane was present, though, of course, a small amount may have been there which the lamps would not indicate. The fire was in abandoned workings and evidence of its previous existence was afforded by the coking of the coal face, though the temperature was normal.

It is said that the experts declared the mine safe, and nongaseous, but this is not correct. All they declared was that the fire was extinguished at the point indicated to them. The mine is known to be not wholly nongaseous.

On Sept. 16, at 5.45 a.m., an explosion took place, killing Frank Scheelt and injuring Adam Clawson and William Walker, who were engaged in erecting stoppings. Nine of these latter were already erected but the building of seven more was needed to complete the walling-in.

It was the intention of the superintendent to flood that portion of the mine as soon as the stoppings were completed, and the work was proceeded with as fast as possible.

Inspectors T. A. Furniss, Thomas Lowther, of Punxsutawney, and Thomas Williams, of Johnstown, investigated the accident.

## Photograph of a Mine Explosion

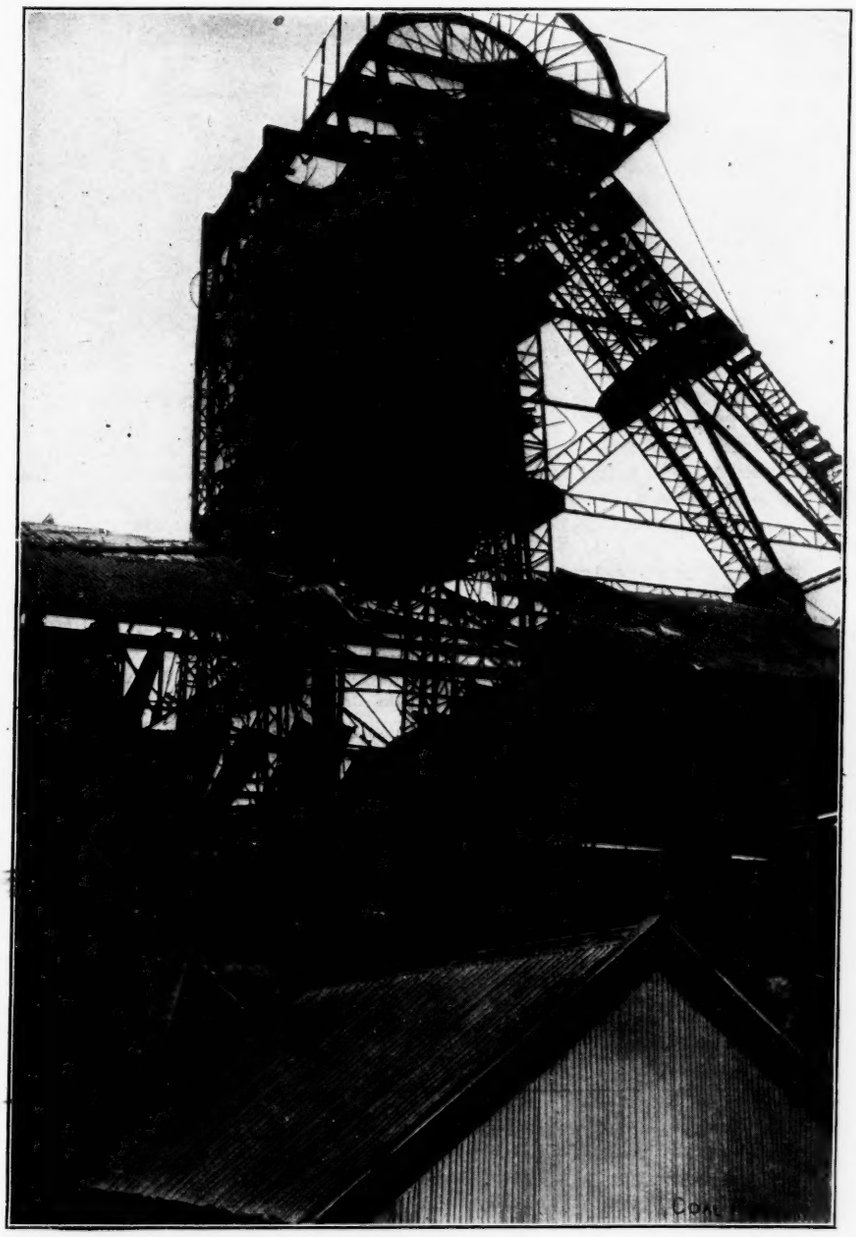
An Australian correspondent sends us the photograph which is reproduced herewith, with the following description:

"A little over a year ago, there was a very severe explosion at the Killingworth colliery, one of the five operations belonging to the Caledonian Coal Co., Ltd., in the Newcastle, N. S. W. district. There was no one in the mine at the time, about 4 a.m.

"The picture shows the headframe as it appeared the next morning with a tangled mass of guides, rails, pipes, hoisting rope, cars and other equipment shot by the force of the explosion, like an inverted baling press. The fine headframe construction this company uses at all their mines is shown."

This is certainly an unusual colliery picture, and is startling evidence of the tremendous force an explosion may develop.

Sullivan class "CE" electric continuous coal cutters have been in use for the past two or three years, by this company, for mining a considerable portion of its output.



RESULT OF AN EXPLOSION IN NEW SOUTH WALES

# Who's Who—in Coal Mining

**Devoted to Brief Sketches of Prominent Men, Their Work and Ideas**

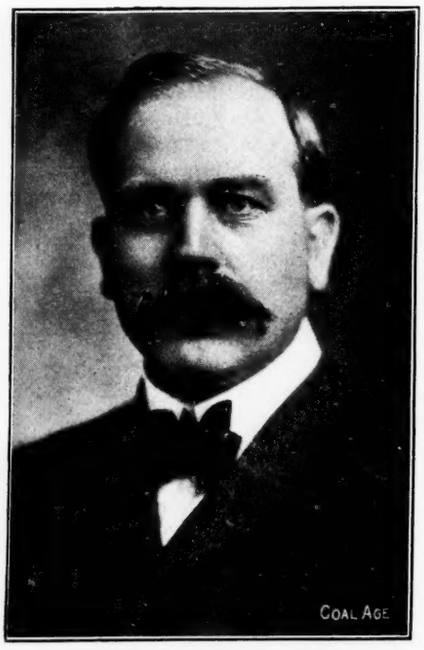
Starting as a breaker-boy and climbing to a position on the directorate of concerns having a bonded indebtedness of a hundred million dollars or so, is the record of William Lawrence Connell, a man who has from early boyhood "gotten results." In fact, there is something disconcertingly tame to the biographer in this man's steady unerring climb to honor and to fortune.

Mr. Connell has no retreats to record. He never fails because he does not flee; there is always a gap in the opposing ranks—a weak spot in the enveloping lines, and through this he passes on to success. We have not been able to see all the difficulties he encountered, or we would have recorded them with remorseless detail, for people are too apt to argue that a swift progress means an easy road without hills or thank-you-ma'ams.

And this doggedness is not shown alone in the real life work of "Bill" Connell, but also in his hobby—politics. He is a steady fighter in the game, but he puts into it only astuteness and vigor, not an iota of rancor. Lackawanna, which is the scene of Connell's political battles, leans toward Democracy. Connell is a Republican, but that seems to make little difference, for fighting, smiling and winning are confirmed habits with him.

W. L. Connell was born at Minooka, a suburb of Scranton, Penn., on Oct. 14, 1862, and received his education at the public schools of that city, finishing his training at a private school. From there he went to serve an apprenticeship in the old National Colliery, belonging to his uncle, William Connell. This colliery stood on the site of the very first mine operated in Lackawanna County. He was given a thorough training, serving as breaker-boy and in other positions about the mines, becoming at length a clerk in the company office.

Here Mr. Connell's acquaintance with the mines temporarily ceased; whatever he had to do with them thereafter was of an official and not of a physical character. But his understanding of the work has always been quickened by his early experience, and the labors of his early manhood taught him the impelling lure of the mining profession. At 18, he thought a mercantile life would suit him better, so he took a position with the Hill-Heaiser Furniture Co. as a clerk, and during his stay with that firm managed to put his name into the concern, which was known before long as Hill & Connell, furniture dealers.




W. L. CONNELL

In 1891 he organized the Enterprise Coal Co., and became its manager. There was but one colliery under his charge, but it gave him his opportunity, as he was both an apt scholar and a diligent worker.

A large mine fire made his tenure of office as manager no sinecure. Often the ignition of a bed of coal has made a bankrupt of a successful mining man, and the one at Enterprise for a while promised to put W. L. Connell into the position of a man without resources, but he doggedly fought it until it was out.

He later became manager of the North End Coal Co. This was one of his best operations, and he is president of the corporation at the present time. In 1899 he organized the Green Ridge Coal Co. and became manager and treasurer of that corporation. The multiplicity of his later undertakings made him exchange his title for that of president.

Mr. Connell's enterprising spirit made his eye rove beyond the flattened crescent of the northern anthracite field to the little satellite lying miles to the west, the Bernice coal region. Here he organized the Connell Anthracite Mining Co. This field has brought him and his associates barrels of money. He is even now president and general manager of the operation. About two years ago the breaker of the colliery burned, and from the ashes and Connell's enterprise rose a modern, mammoth coal breaker, adequately meeting the needs of the company.

But Bernice was a near-hand venture compared with the next. The anthracite fields are closely held and transactions in coal properties of size have been rare in the last decade. So "Bill" Connell with P. J. Foster and S. K. Griffith organized the Lackawanna Coal & Lumber Co. to buy and develop a tract of 52,000 acres in West Virginia. Having entered the West Virginia field, W. L. Connell thought he would extend his interests and so he caused the L. C. and L. Co. to purchase almost all the stock of the Paint Creek Collieries Co., thus adding 13,285 acres to their holdings. The consolidation is one of the largest interests with which Mr. Connell is identified.

Versatility is W. L. Connell's virtue or failing—view it as you will. He has not been content with the coal industry, and so in 1910 he organized the International Bank, and he presides over that institution today. He aided in the organization of the Scranton Life Insurance Co., and helps to direct its affairs, and also those of the International Textbook Co. and the International Publishing Co.

In 1893 he was elected mayor of Scranton. When the municipality became a second-class city, the governor appointed him as mayor, a position he held from 1902 to 1906. But perhaps no position is more significant of the place Mr. Connell occupies in the good opinion of all people, whether of wealth and prominence or only of mediocre means whose sole influence is in a vote, is the fact that he is a member of that conciliation board, which has kept industrial peace almost unbroken since 1902.

Governor Tener has appointed him as a member of the Mine Cave Commission, a body convened to suggest revision in the laws which will guard property owners against mine caves.

"Bill" Connell's hand, name and influence are in so many enterprises, and shape so many of the Scranton interests, that one brief sheet will not hold the mirror up to nature. Where strifes are bitterest, Connell comes as peacemaker and umpire. He has been placed in a most delicate position—that of member of the Mine Cave Commission. This man, a leader in politics, a successful mine manager, a good financier and an able conciliator, will, if anyone can, put Scranton firmly on bedrock without stirring up a frenzy of opposition.

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*This journal is interested solely in matters relating to the fuel industries, and is designed to be a medium for the free interchange of ideas, the detailed description of coal-mining practice, and the expression of independent thought calculated to benefit both operator and miner.*

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# COAL AGE

## Our Birthday

A BIRTHDAY—the anniversary of the first day of our existence—and this one marked by the first milestone in the life of COAL AGE.

It has been a remarkable year; a year full of inspiration from the moment the first rays of hope sprang up in the horizon and revealed the wide stretch of domain—a land rich in promise—that was to be ours in return for patient toil.

The results achieved in this first short year show how effective has been our toil, and how well our work for the betterment of mining conditions has been appreciated by the men for whom we labor.

In the words of Phillips Brooks, "Our highest moments have been our truest moments." We have felt the greatest inspiration at those times when our pen has conveyed to readers all that lay hidden in our hearts that would help them.

In this way, COAL AGE has, in a few short months, come into the offices and homes of nearly nine thousand subscribers; and won a lasting regard in the hearts and lives of fifteen or twenty thousand readers, who watch eagerly for its coming each week.

To the engineer, mine manager, superintendent, foreman and fireboss, as well as to the ambitious miner and student, the columns of COAL AGE have appealed alike. To many, its pages of valuable information have proved a revelation. The financier has spoken of its weekly reports as being the "highest authority in the country"; while many inquirers have sought and obtained information that has solved for them numerous difficult problems in mining.

It is the constant purpose of COAL AGE to be helpful, and always practical. We believe in the open discussion of all subjects pertinent to coal mining, as long as such discussion will serve to elucidate the question discussed and interest readers seeking information.

COAL AGE has unbounded faith in the value of the experience of practical mining men when clearly and plainly told for the benefit of others. For this purpose, the columns of its discussion department are always open to contributors. The use that they have made of these columns the past year is our most cherished reward.

Thus, in continually striving to be helpful to others whose difficulties have been experienced and a way found to surmount them, our contributors have unwittingly become a part of COAL AGE. We gladly welcome such active copartners in our work.

One of these outlying workers writes us, at this birthday anniversary: "Though busy as a boy killing snakes, the folks can hardly get me to my meals when on coming home from the mine I find COAL AGE lying on the table. It is certainly aggressive and progressive. I find all my old friends in your paper, the companions of many trips taken in the interests of better mining. SUCCESS TO YOUR WORK."

Good! Such honest commendation at the close of a year of unremitting toil, goes to the heart of all COAL AGE workers, and is an inspiration for the coming year.

Our watchword is ever HIGHER, PURER, BETTER, with GOODWILL TOWARD ALL.

## Waste of Anthracite

We always welcome criticisms of our editorials for we owe it to our readers to present the two sides of every argument. They have an interest in knowing whether expert opinion sides wholly with us or not.

It is, with no unwilling spirit that we place Eli T. Conner's letter in our paper. The importance of his answer to our charges is not to be gainsaid for Mr. Conner has the "rather intimate personal knowledge of anthracite- and bituminous-coal mining, but particularly the former," to which he lays modest claim.

We pass over his points of agreement with us and proceed to his first quotation

from "Notes on Mineral Wastes," namely, "Fully eighty million tons of anthracite coal is now being left behind in the mines each year, and it is estimated that since coal mining began in this country fully two billion tons of anthracite and three billion tons of bituminous coal have been left in the ground under conditions which make future recovery highly improbable."

We did not attack this statement specifically and in fact we failed to quote it, but Mr. Conner has indorsed it before it has even been questioned. Let us analyze the position in which he is placed by accepting it. In 1911 about 81,000,000 tons of anthracite were produced according to published figures of Mr. Conner. If 80,000,000 tons were wasted, then 50 per cent. of the coal, roughly speaking, was left in the ground.

The quotation of Mr. Conner states that up to and including 1911 fully two billion tons of anthracite had been wasted. Now 2,180,000,00 tons had been sent to market according to the estimate of the Geological Survey. That is, the waste up to and including 1911 was only about 48 per cent. We are not going to haggle over 2 per cent. of difference, though it is strange indeed that any figures taken from official sources and indorsed by Mr. Conner can be combined with figures quoted from the U. S. Geological Survey reports and being legitimately used can be made to show that the percentage of waste is larger now than in all the years from the first mining of coal in the country.

Bear in mind that today much of the coal shipped is from such washeries as are working wholly or in part on old culm piles, a trifle also comes from river dredging and some from open cuts where the loss is perhaps not greater than 5 per cent. Thus it will be seen that the figure, 50 per cent., would be rightly much enlarged if the coal taken by regular mining processes were compared with the 80,000,000, which, according to the statement, were being left unrecoverably in the hill.

So prior to 1911 we wasted 48 per cent. of the coal; in this year of grace we waste 50 per cent. What does Mr. Conner say on this subject? "In speaking of the northern anthracite field, at the Congress of Applied Chemistry, last month, he said: "In recent years greater care has been exercised in columnization of pillars and a large ultimate recovery can reasonably be expected." He also shows how now bottom benches are lifted with the upper, making better recovery.

It is well to note as stated by the same authority that the Northern or Wyoming Valley district produces 59 per cent. of the whole anthracite output. Hence, according to Mr. Conner a large improvement has been, and is being, effected, yet according to the Bureau of Mines and the aforesaid, that industry is slowly becoming more wasteful than ever before.

"In earlier days," says Mr. Conner, speaking of the northern field, "it was found that about one-third of the coal left in the form of pillars was sufficient for roof support, and this proportion rules to a very great extent and in some mines is still adhered to." Now as it is understood that a large recovery is being provided for in this same northern field, the waste must be less than it used to be. If we understand him aright, in his table presented to the Congress of Applied Chemistry, he thinks that 25 per cent. of the old pillars and 50 per cent. of the new will be saved. The loss in the northern field was 33⅓ per cent. We will assume conservatively that it is 33⅓ per cent. now, no more, no less.

Hence 59 per cent. of the coal is produced at 33⅓ per cent. loss. In order that the average loss in the whole output may be 50 per cent. the percentage of loss in the Lehigh and Schuylkill districts must be far greater than 50 per cent. *Quod est absurdum.*

Mr. Conner makes a final statement in his letter which clarifies all before it and makes his whole opinion clear. "Notwithstanding the earnest efforts of far-sighted managers and owners, the losses in mining and *preparation* of anthracite coal are still in the *neighborhood* of 50 per cent. of the original content."

In COAL AGE of Oct. 14, 1911, just one year before the letter from Mr. Conner, which we quote, he said: "In comparing the final results in the production of anthracite and bituminous coal it should always be remembered that anthracite coal, on account of the preparation necessary to make it marketable is subjected to a loss in breakage and degradation of sizes which amounts to about 25 per cent of the raw material loaded into the mine car at the face in the northern anthracite field, and in the southern field the loss is much greater."

Bearing this in mind we can easily see why Mr. Conner adding loss below and loss above ground can place the figures at about 50 per cent. But this is precisely what the bureau does not say. It takes count of what is left in the mine alone, and this, it makes over 50 per cent. of the coal exploited, how much over we cannot say.

We would like to hear comments on this matter from the anthracite operators. Will the miracle referred to in our editorial really happen, and will those who feel so bitter about the matter remain silent or plead guilty when so damning a charge is made against the industry?

## Our Future Address

A high building will be erected for the Hill Publishing Co. at the northwest corner of Tenth Avenue and Thirty-sixth Street, New York. George Milne, representing James Bailey, who controls the Tietjen and Fanning Estates, sold the plot to John A. Hill, the president of the above company.

It covers 469, 471, 473 and 475 Tenth Avenue and 503, 505, 507 and 509 West Thirty-sixth street. The plot comprises half the block on Tenth avenue by 175 ft. on Thirty-sixth Street, and covers 17,500 sq.ft. At present the site is covered with tenement houses. During the last few years this section of Tenth Avenue has attracted many large concerns.

The Hill Publishing Co. will erect a 14- or 16-story building of heavy construction, with the object of having the most complete publishing and commercial building in the world. Every known convenience for cleanliness, comfort, safety, low insurance and economical conduct of business will be installed.

The publishing company will occupy several floors. A special feature of the building will be a roof garden for the recreation and use of the office force of the building. The new home for the publishing company will be ready for occupancy February, 1914.

The continued addition to the number of papers published by the Hill Concern has made this development necessary. This firm now publishes *American Machinist, Power, Engineering News, The Engineering and Mining Journal* and COAL AGE. The present building will be removed to accommodate the new Court House.

## The Evolution of a Department

By R. Dawson Hall

The sociological department of Coal Age has had to undergo a complete process of development since first it started its uncertain course. We originally purposed to keep it solely for a discussion of the first principles on which the sociology of the coal regions rested. Sanitation, health, first-aid and rescue work were to be treated on a purely scientific basis, using the various developments solely as the text from which to discourse on the subject treated.

But with maturer thought has come the conviction that relating, in a severe scientific style, the social principles on which life in the coal regions rests, would fail to do the work for which the department was designed.

We can have no higher aim than to aid in advancing the social work of the various mining districts. To foster local pride, and the desire for higher things and better thoughts, to give due credit where credit is not now given, are just as worthy objects of attention as to give the life history and ecdyses of the anchylostoma. To discuss first-aid for instance; we cannot feel that in the early part of the year, we gave due credit to those miner heroes, who, by diligent training, were preparing to add heroism to skill, whenever the call came to rescue their fellows.

When a man definitely enrolls as a rescue or a first-aid man, he declares by that act that he desires to be among the first to force the way where every step may lead to death. Such a man places himself almost side by side with the volunteer who steps from the military ranks to take part in a "forlorn hope."

Men such as these, and many there are of them, deserve recognition at least as much as those worms and micro-organisms with which for a time our columns were cumbered. There never is a time in which it is ill-fitting to mention such men, and by that mention to stir others to greater measures of courage.

The miner, brave and self-sacrificing, has never had the credit which is his due. We do not know of any place in the United States where an adequate monument has been unveiled to the men who lost their lives and to those who sacrificed them in any disaster. Such a recognition was accorded those who died at the Pretoria mine in England.

Little is the recompense, scanty is the meed of honor accorded to those men who jeopardize their lives in the rescue of their fellowmen. Doubtless what little recognition we can give them is not adequate to the services they render, but we give it willingly, even if we lower a few scientific standards and vex some of the readers, who desire us to give them nothing but what is wrongly termed "high-class material."

In another way, we believe we can be of service to operator and miner. The institutes seem very pleasurable organizations on paper; in point of fact, to the instructors they promise genuine, hard and disconcerting work. Moreover, the onlookers are too often prone to criticize and say that the work is paid for.

I remember how, at least 12 years ago, I started two night schools in a little mining town, one for boys and the other for men. Half the village scorned me for starting the work, the other half declared that the school board footed the bill, and paid me liberally for my work. Yet I paid from my own pocket for the lamps and oil and was never able to "break even" on the book bill.

To those men who teach at these institutes, who shine so brilliantly at the annual banquet and are extinguished so dismally and completely in the 12 months which follow, the sociological department is in part dedicated. If cheering them with recognition can add new zest to their noble work and hearten another scholar to continue his studies despite the calls of maidenly attraction, home ties, the ball-team or the band, we shall feel assured that we have done the work for which the columns were designed; namely, "for the betterment of living conditions in mining communities."

We feel, moreover, that by showing what others have done, we can give the encouragement of a good exemplar to those companies which propose to improve their mining villages. There are no men so great but what a note of approval can reach them, and no men so sure but what a recognition of their worth will strengthen them.

The sociological department of Coal Age is presented to the industry, not only as a technical addition to a scientific paper, but as an encouragement and inspiration to those who desire to remodel the lives of the colliers on a broader, happier basis. *From* the men who are doing such work we desire an account of what they are doing, and *to* those men, who are far more numerous than grumblers believe, we offer our loud acclaim.

## Our Coal Trade Reviews

By A. T. Shurick

The sharp line of demarcation between the producing and selling end of the coal business is too well known to all coal men to require comment. Each is in itself a distinct profession, as unlike the other as the farmer is the groceryman. The men at the heads of these departments have made their work a life study. The operating man has either served his time as a trapper boy or put in some of the best years of his life at a university, while the sales agent has become gray studying the idiosyncrasies of coal consumption and coal consumers.

Each is the ultimate authority, and reigns supreme in his particular department, and both are firmly convinced that the success of the industry rests directly upon his shoulders. Both can recount an endless array of vicissitudes. The operating man has his breakdowns in machinery, bad roof or bottom, lack of labor, etc., to contend with. The salesman faces the problem of disposing of large tonnages on an unresponsive market, or keeping old customers satisfied in times of a heavy demand, when production is curtailed, due to insufficiency of labor or inadequate car service.

And yet these two departments are so intimately related that no complete segregation can be obtained. The operating man must know and be a careful student of the market in order to plan the work of his mine to meet a heavy or light demand. The general manager who can foresee an easing off in consumption several months ahead, will effect numerous important economies, if warned in time. And the sales agent must also carefully study the "futures," and endeavor to anticipate and make adequate provision for fluctuations in the demand.

That such is the case, one only has to investigate the selling department of any large company. These, almost without exception, require their different local representatives at the large distributing centers to furnish the head office with a weekly synopsis of market conditions at that point. And it may be said in pass-

ing that these letters are often the replica of those run in COAL AGE. A summary of these brief reports is made up and placed before the president, who sizes up the situation and rearranges his program of work at the collieries, for either increasing or decreasing the production as the case may be.

And so COAL AGE has adopted a like policy. While essentially a technical paper, we are firmly convinced that no coal operation can be a financial success when the heads of its operating department are not sufficiently familiar with market conditions to gage the demand for their product.

At every large distributing center in the country, we have a correspondent, who is properly compensated for the information he furnishes. In most cases these men are acknowledged authorities on trade conditions in their locality, and we require them to furnish brief data, concise and to the point.

These reports, appearing each week in COAL AGE, may be likened to those sent in from the local offices of the large companies. From these we compile a general review, which is a brief synopsis of market conditions over the entire country. This review may be compared to the before-mentioned synopsis of conditions placed before the president of each coal company. So our reader ultimately has before him the same identical information only it is gaged along broader and more comprehensive lines, and is compiled by men trained in their work.

### OUR CRITICS

No department of the importance of this one can hope to escape criticism, and our "Coal Trade Review Department" has received its full quota of complaints. The little retail dealer, anxious to get in touch with the producing end of the business, believing this will be of material aid, writes us in strong language that we have only four pages on market conditions as compared with many times that number in the trade journals. In answer to this protest, we might cite the remark of the president of one of the largest selling agencies on the Atlantic Coast, who said, in referring to this department: "Your plan of handling this work covers my idea of what a trade review should be. You have everything condensed into the smallest space possible so that it may be quickly read."

Consolidation of material has been the slogan of the Trade Review Department. Tables covering statistics relating to production and transportation are carefully analyzed, and the non-essentials culled out, without any tangible depreciation in the value of same. The growing importance of the country's export trade is realized, and is being anticipated by periodical tables and notes on foreign production, as well as a weekly *resumé* of the British market.

# Portable Car Dump for Outside Work

**A portable device installed at the "Constantine the Great" mines, Bochum, Prussia, for dumping cars of slate on the culm pile. Its low cost, ease of operation and portability are the strongest features.**

Note—Translated by E. P. Buffet from "Gluckauf," Essen-Ruhr, Germany.

A new haulage car dump invented by Herr Hasenjurgen, of Herne, has been for some time in use at the culm piles of the "Constantine the Great" mines, Bochum, Prussia. As described in *Gluckauf* (Sept. 14, 1912), it consists of a portable underframe *A*, see Fig. 1, upon which is a tipping platform *B*, joined thereto by the hinges *C*. The bent sheets *D* of the tipping platform embrace the wheels of the car so as to hold it fast in any position. On the under frame are also upright beams forming the column *E*, in which is the single-acting air cylinder *F*.

On the piston rod *G* is a crosshead *H*, connected with the tipping platform by the chains *I* and *K*, which pass over the roller *L*. The chain *K* is attached to the edge of the tipping platform, while the chain *I* is fastened to its under side. The piston movement is controlled by the threeway cock *M*.

The frame of the dump can be temporarily secured to its rails or ties. The car is run upon the platform by the auxiliary inclined rails *N*. In order to moderate the shock when dumping and lessen the recoil, wooden blocks or supports are placed as shown, on or between the ties of the large track.

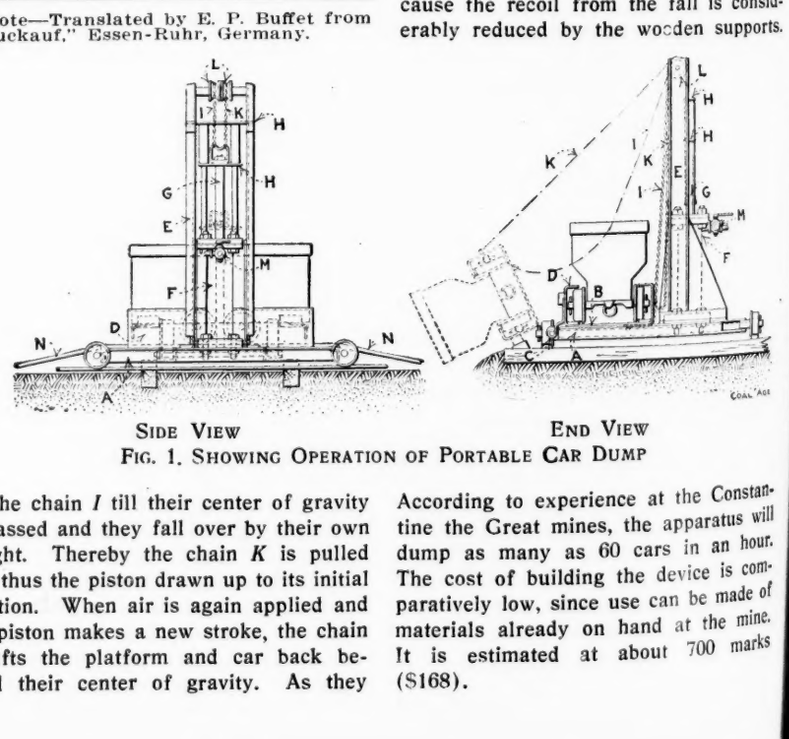
### OPERATION

The dump is operated as follows: After running the car upon it, the piston is moved downward by compressed air and the tipping platform with the car raised by the chain *I* till their center of gravity is passed and they fall over by their own weight. Thereby the chain *K* is pulled and thus the piston drawn up to its initial position. When air is again applied and the piston makes a new stroke, the chain *K* lifts the platform and car back beyond their center of gravity. As they drop back to the horizontal the chain *I* restores the crosshead to its original position.

### NOT ADAPTED TO UNDERGROUND WORK

Because of its comparatively large size, the dump is not adapted to use underground, but is excellent for the culm pile, since it can easily and quickly be moved along from place to place. Its operation is very simple and the wear small, because the recoil from the fall is considerably reduced by the wooden supports.

According to experience at the Constantine the Great mines, the apparatus will dump as many as 60 cars in an hour. The cost of building the device is comparatively low, since use can be made of materials already on hand at the mine. It is estimated at about 700 marks ($168).




SIDE VIEW END VIEW

FIG. 1. SHOWING OPERATION OF PORTABLE CAR DUMP

# Discussion by Readers

**Comment, Criticism and Debate upon Previous Articles, and Letters from Practical Men**

## Should Mine Fans be Built Reversible?

*Letter No.* 1—The question of reversing the ventilating current while men are in the mine is of grave importance. Men become creatures of habit and, after an explosion or other unusual occurrence, the major portion of the miners will, without doubt, seek to escape from the mine, either by the way they are accustomed to travel, or by the well known intake or fresh-air roads.

If a fire were to occur on the intake of the current the smoke and gases would be carried through the intake to the workings and fill every passageway with smoke. In an occurrence such as this, the miner, on reaching the intake air course, would smell the smoke, and at once seek the return airway. This is one of the conditions that would warrant the prompt reversing of the current. Therefore to design, build and house a mine fan and totally ignore the possibility of ever needing to reverse the air current, would be to wilfully cast aside one of the safeguards constituting the life line in the mines.

I am of the opinion that all mines, large or small, should be equipped with fans, having a system of doors that would provide for a rapid change in the direction of the ventilating current through the mine. My reasons, briefly stated, are the following:

1. To control fire and smoke, in case of need, in the mine.

2. To expedite rescue work after an explosion or mine fire.

3. To keep shafts clear of ice in winter.

4. To take advantage of change of temperature with change of season.

Notwithstanding the fact that, at some mines, there might be "some fool foremen" employed, who might lose their heads, the remaining, say 99 per cent., might and probably would be cool, level-headed foremen, who would know how to do the right thing at the right time in any possible emergency. Therefore, in 99 per cent. of cases, it would be unfair to refuse to make this provision for safety and to protect the life line of the mine because of a remote possibility that one man in a hundred might make an error of judgment. Without a doubt, many serious disasters can be prevented by reversing the air current, when a fire occurs on the intake airway and gets beyond control.

There are times, of course, when reversing the air might drive the afterdamp of an explosion directly onto the escaping men and suffocate them, when they supposed they were traveling on the intake of the air, and were safe. But the chances of doing this are remote, as miners usually expect to find the ventilating current deranged after an explosion.

When it is desired to keep the intake or downcast from being choked with ice, in the winter time, the most efficient way is to reverse the air and make the downcast shaft the upcast, for a period. This will clear the shaft of ice, and the ventilation can then be restored to its regular course, and operations in the mine resumed. The work of changing the air will only occupy Saturday night and possibly part of Sunday, when no men are in the mine.

Again, it is often advantageous to reverse the air, so as to take advantage of the heated condition of a shaft, caused by the exhaust steam of the pumps or the presence of steam pipes in the shaft. The difference in the outside temperature in winter and summer often makes it advisable to change the course of the air current in the mine. It has been proven, time and again, to be effectual to reverse the fan after an explosion, to enable exploring parties to enter the mine.

Some colliery officials of long and extended experience differ as to whether mine fans should or should not be built reversible, but it "goes without saying" that we fail to provide one of the vital strands in the life line if we neglect to make this arrangement, and leave but one way open, in case a condition or emergency arises demanding a choice. In other words, by failing to provide a reversible fan we limit our capacity to aid those in danger.

Even supposing conditions were such that men were powerless to help their unfortunate comrades who, for a time, are beyond human aid, this fact *does not* warrant the previous curtailment of the means by which aid might be rendered the men, and property saved.

Again, if it were necessary to keep the ventilating current in its regular channels, as far as possible, this decision even *does not* warrant the assumption that no condition could arise in a mine that would require the reversal of the air in order to give the men entrapped a way out to safety.

There are many conditions arising that warrant the reversal of the current, and usually there are more men around the mine than the one "fool foreman." Therefore the advantages are overwhelmingly in favor of an equipment whereby the direction of the air current in the mine can be changed. I have no hesitancy in saying all *mine fans should be built reversible.*

R. Z. VIRGIN,
Johnstown, Penn. Mining Engineer.

*Letter No.* 2—There are a great many reasons why no mine fan should be installed, at any coal mine, without providing means by which it may be reversed. In adopting a reversible fan there is every advantage to be gained and nothing to be lost. It costs little more to install a reversible fan than it does to install one that cannot be reversed.

The following are a few essential reasons why a mine fan should be reversible:

First, there is liable to be a mine fire either on the main entry or on the intake, at any time, and in almost any coal mine; and if a fire takes place in any part of the mine and the gas and smoke from this fire is driven in the direction of where the miners are at work, there is danger that these men will be suffocated. But, with a reversible fan, the current can be instantly reversed and the smoke drawn away from the men so as to allow them to escape.

Second: In case of a local explosion, in any section of a mine, it is sometimes necessary to reverse the air current to keep the afterdamp from going in the direction of the workmen who may not be affected by the explosion. In addition to this, it is sometimes beneficial, after such explosion, to reverse the air current in order to expedite the rescue of men that may be alive in that section of the mine.

Again, we often find it beneficial, in the winter, to force the air into the mine instead of exhausting in the usual way, so that steam may be injected into the air, in order to increase the humidity of the mine air. In summer time, we find this condition reversed and it is then more beneficial to have an exhaust fan. My personal opinion is, that there is no good reason why a mine fan should not be reversible.

JOHN LAING,
Chief of Department of Mines, Charleston, W. Va.

## Anthracite Waste

I have read, with interest, your editorial in COAL AGE, Oct. 12, entitled "Why Do They Do It." I heartily agree with your commendation of some of the work of the Bureau of Mines, of which Dr. Joseph A. Holmes is the director, and I wish to add my appreciation of the many excellent bulletins put forth by the bureau relative to coal mining, and the explosives used in the production of coal.

I have noted the criticisms made by yourself and other coal-trade papers, of the statements made in the bulletin recently published, entitled, "Notes on Mineral Wastes" (Bulletin No. 47), in which the bureau makes the following statement: "Fully eighty million tons of anthracite coal is now being left behind in the mines each year, and it is estimated that since coal mining began in this country, fully two billion tons of anthracite and three billion tons of bituminous coal have been left in the ground under conditions which make future recovery highly improbable." I would also again quote the clause referred to in your editorial, which says: "In mining coal in this country, probably one-third of the bituminous coal and one-half of the anthracite are left in the mine."

Your criticisms of the bureau for these statements, seem to me, from a rather intimate personal knowledge of anthracite and bituminous-coal mining, but particularly the former, to be somewhat unfair to the bureau. It is a fact acknowledged by many eminent engineers and operators in the anthracite regions of Pennsylvania, and which I have personally been able to verify by exhaustive investigations, that considering the industry as a whole, practically 50 per cent. of the original content of mineable coal is, in the words of the bulletin referred to, "left in the ground under conditions which make future recovery highly improbable."

It is true that very much better recovery is accomplished under favorable conditions in portions of the field, and it is also true that in recent years, due to improved methods that have been quite generally adopted, better results are attained than in the earlier years of the industry, but, notwithstanding the earnest efforts of far-sighted managers and owners, the losses in mining and preparation of anthracite coal, are still in the neighborhood of 50 per cent. of the original content.

I hold no brief in the interest of the Bureau of Mines, but in a spirit of fairness, I wish to go on record as disagreeing with your rather severe criticism of their estimate of the losses in mining and preparation of anthracite coal.

ELI T. CONNER,
Mining Engineer.

Philadelphia, Penn.

## Taking a Timber Down a Shaft

Referring to the inquiry of Mine Foreman, COAL AGE, Sept. 7, p. 334, I want to suggest the following graphical method that would, if carefully drawn to any convenient scale, give the longest length of beam that can be taken down the shaft and into an entry, without using formula 4 given in the reply to that inquiry.

It is evident that if the beam were a mathematical line, having no breadth or thickness, the greatest length of line extending diagonally from one corner of the shaft to the opposite floor line of the entry, and touching the under edge of the collar-beam, would be found by the formula

$$\tan A = \sqrt[3]{\frac{H}{W}}$$

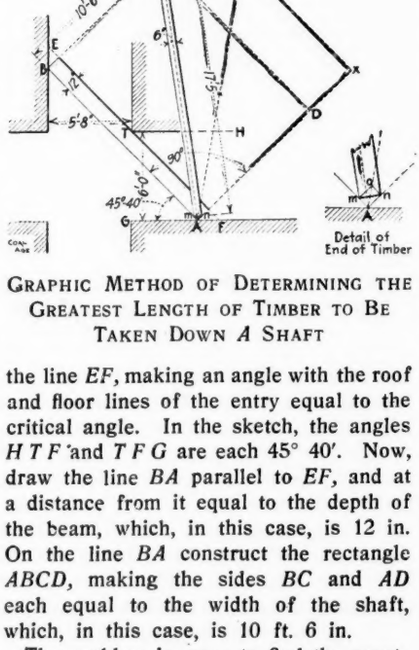
For a beam having width and thickness, however, the critical angle must be found by formula 3, given previously on p. 334, which is:

$$\tan A = \sqrt[3]{\frac{H - t \cos A}{W - t \sin A}}$$

As there calculated, for a beam 6 in. wide and 12 in. deep, and for the given dimensions of the shaft and entry, the critical angle is 45° 40′.

### THE GRAPHICAL METHOD

Now, having found the critical angle $A = 45° 40'$, through the point $T$, draw




GRAPHIC METHOD OF DETERMINING THE GREATEST LENGTH OF TIMBER TO BE TAKEN DOWN A SHAFT

the line $EF$, making an angle with the roof and floor lines of the entry equal to the critical angle. In the sketch, the angles $H\,T\,F$ and $T\,F\,G$ are each 45° 40′. Now, draw the line $BA$ parallel to $EF$, and at a distance from it equal to the depth of the beam, which, in this case, is 12 in. On the line $BA$ construct the rectangle $ABCD$, making the sides $BC$ and $AD$ each equal to the width of the shaft, which, in this case, is 10 ft. 6 in.

The problem is, now, to find the greatest length of a rectangular strip $m\,n\,s\,t$, having a width equal to the width of the beam (which is, in this case, 6 in.), and that will reach diagonally from one corner of the rectangle $ABCD$ to the other corner; so that the corners $m$, $n$, $s$ and $t$ of the strip will lie in the sides of the rectangle $ABCD$. To do this, take the center of the rectangle $ABCD$ as a center, and describe the arcs of concentric circles, cutting the opposite corners $A$ and $C$ of the rectangle, until an arc is found whose chord is equal to the width of the beam. The points $m$, $n$, $s$ and $t$, in which these arcs cut the rectangle, are the corners of the beam. After a few trials I find the length of this strip or beam, by scale, to be 17 ft. 5 in., which is practically the same as that obtained by the calculation on p. 334.

V. SRAJN,
Mining Engineer.

Hymera, Ind.

[The graphic method suggested by our correspondent is good, as far as it goes. It is incomplete, however, since it does not give an exact method of inscribing the rectangular strip $m\,n\,s\,t$ in the rectangle $ABCD$. This may be done in the following manner:

Extend the side $AD$ of the rectangle $ABCD$, making $AX$ equal to $AB$. At the point $X$, erect the perpendicular $XY$, making its length equal to $AD$, the width of the shaft, and draw $AY$.

Referring, now, to the small detailed sketch at the right, lay off on the line $AY$, the distance $Ao$, equal to the width of the beam (6 in.), and draw the lines $on$ and $om$, respectively, parallel to $Am$ and $An$. This determines two corners, $m$ and $n$, of the diagonal strip. By a similar construction, the opposite corners $t$ and $s$, at the upper end of the strip, can be found. The length $ns$ or $mt$, by scale, will then give the greatest length of beam that can be taken down the shaft, and into the entry.—EDITOR.]

## Concrete in Mine Airways

The use of concrete in mining may be extended to replace timber in airways. The roof of most coal mines is formed of shale, which deteriorates rapidly where exposed to the weather, thus necessitating a large amount of timbering in entries. If this weathering could be overcome, little timbering would be necessary. This has been done by the Bethune Co., of the Pas-de-Calais district, of France, by lining their gangways with reinforced concrete made of burned shale, boiler ash, cement and water. This mixture requires 15 days to set. The reinforcement consists of 4-in. arched rods, placed 32 in. apart, and further strengthened by round 2-in. rods, placed lengthwise, 9 in. apart. Not only does this method reduce the cost of timbering, but it prevents interruption in hoisting, due to falls of roof; watering can be easily and thoroughly done; lighting is good, as the walls are light-colored, and danger due to falling roof when timbering is destroyed by a runaway trip is absent.

Pittston, Penn. ENGINEER.

# Inquiries of General Interest

**All Questions Must be Accompanied by Name and Address—Not for Publication**

## A Peculiar Manifestation of Gas

A few days ago we encountered a peculiar gas accumulated above a fall of slate. The slate is a roof slate 4 ft. thick. There is 2½ ft. of coal above the slate.

When a safety lamp was raised into the gas, the flame was darkened by the gas and the blaze appeared to lift up from the wick a space about the thickness of a dime, as shown in the accompanying sketch (Fig. 1). The lower portion of the flame for a quarter of an inch was a deep blue color. A few days later we found the same gas, which again gave the same result. This time we left the lamp in the gas for about 2 min., when it went out.

As we differ in our opinions as to what the gas is, we have agreed to submit the question to COAL AGE. It is claimed by some that it is a mixture of blackdamp and marsh gas, while others say that the gas is free nitrogen.

Johnstown, Penn. G. H.

If this gas exists as an accumulated body of gas above the falls, it must be lighter than air. This fact, together with the darkening or dimming of the flame would indicate that the gas was either pure marsh gas ($CH_4$), or a mixture of marsh gas and carbon dioxide ($CO_2$). Such a mixture frequently forms in mines where carbon dioxide exists in the roof or in an overlying seam and diffuses into the marsh gas before the latter is diluted with air. This forms a mixture lighter than air and has been called "flashdamp." The mixture depresses the flame of the lamp, owing to the extinctive effect of the carbon dioxide. When the lamp is first raised into the gas, a cap can be seen on the flame, but this rapidly disappears and the flame dims and is eventually extinguished unless the lamp is withdrawn from the mixture.

Free nitrogen is somewhat lighter than air and extinctive of flame; but it would be rare to find this gas accumulated in a body in the mine. If the gas found was undiluted marsh gas, that is, to say, marsh gas unmixed with air, the flame of the lamp when first introduced into the gas would have an unsteady motion and would be quickly extinguished. We believe the mixture was composed of marsh gas and carbon dioxide.

There is nothing peculiar in the fact that the flame appeared to lift up from the wick, as this is a common appearance of flame, especially in gas. The dark blue, or deep blue appearance of the lower portion of the flame was undoubtedly due to the presence of fresh air in

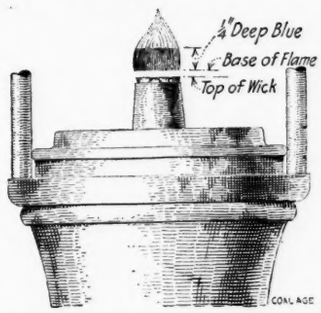



FIG. 1. SHOWING THE APPEARANCE OF THE FLAME IN THE DAVY LAMP

the lower portion of the lamp, which would render the combustion there more complete and decrease the luminosity of the flame. Clearly, it is an impossibility to assert, with any degree of certainty, what may have been the exact nature of this mixture, from the appearance of the flame as described. Our remarks are only suggestive of the condition that might prevail. In any case, an analysis of the gases is necessary to determine the character of the mixture.

## Elevation of a Dirt Dump

It is proposed to build an inclined track a distance of 600 ft. to a point where dirt can be dumped. As shown in Fig. 2, the car of dirt is to be drawn up the incline by a ¾-in. cable, passing over a sheave or pulley at the top of the incline and returning to the entry, which is located at the foot of the incline. No tail rope is to be used, and

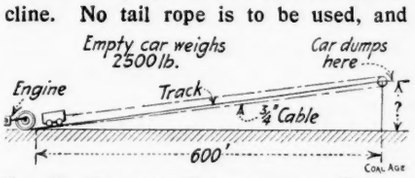



FIG. 2. DIAGRAM SHOWING THE ELEVATION OF THE PROPOSED INCLINE

the grade of the track must be such that the empty car in descending the track will pull the rope back with it. Following is my solution; I would like to know if the same is correct.

CHAS. F. SHERMAN,
Mining Engineer.

Farmington, Ill.

Let $x$ equal the required per cent. of grade, expressed decimally; thus, 5 per cent. = 0.05. Now, assuming that for small angles of inclination, the tangent or percentage of grade ($x$) may be taken instead of the sine of the angle, the gravity pull of the car is 2500 $x$. Also, for a small angle of inclination the weight of the car may be taken for the normal pressure on the track. Then, taking the coefficient of rolling friction of the car as 0.025, the friction pull of the car is $2500 \times 0.025 = 62.5$ lb.

### WHEN THE CAR IS AT THE BOTTOM OF THE INCLINE

Assume, first, the car is at the bottom of the incline. In this case, there will be 1200 ft. of rope, reaching up the incline and back to the engine. Since a 1-in. wire rope weighs 1.58 lb. per lineal foot, the weight of a ¾-in. rope is $1.58 \times (¾)^2 \times 1200 = 1066$ lb. The weight of the rope in this case is balanced, and the only forces opposing the gravity pull of the car are the friction pull of the car and the friction of the rope and pulleys.

It will be safe to assume the friction of the rope and pulleys to be ¼ of the weight of the rope; or, in this case, $1066 \div 4 = 266.5$ lb. Therefore, equating the gravity pull of the car with the two resisting pulls, namely, those due to the friction of the car and the friction of the rope and pulleys, respectively, we have

$$2500\,x = 62.5 + 266.5 = 329 \text{ lb.}$$

$$x = \frac{329}{2500} = \textit{say } 13 \textit{ per cent. grade}$$

### WHEN THE CAR IS AT THE TOP OF THE INCLINE

When the car is at the top of the incline, there will be but 600 ft. of rope to drag, which will reduce the friction of the rope and pulleys one-half; but the rope being, now, unbalanced will cause a gravity pull due to 600 ft. of rope on the incline. The *increase* due to the gravity pull of the rope is less than the *decrease* due to the friction pull of rope and pulleys, which gives a net decrease, and makes it necessary to consider only the case where the car is at the foot of the incline. The required grade will, therefore, be 13 per cent.

[Assuming the coefficient of rolling friction and the friction of rope and pulleys to be correct, the above is a practical solution, and is correct; but different values for these coefficients will give different grades required for this incline.—EDITOR.]

# Examination Questions

**Selected from State Examinations, or Suggested by Correspondents**

## Mine Foreman's Examination Held at Centerville, Iowa, May 7 and 8, 1912

*Ques.*—Under what conditions or circumstances may natural ventilation occur in a mine?

*Ans.*—Whenever it is possible for two air columns of different temperature to form in the air courses or shafts of a mine, the result is a difference of pressure caused by the unbalanced weight of the heavier of these two air columns. The difference of pressure causes a circulation of air or produces an air current, in the airway. The same difference of pressure may be caused by a surface wind being directed into the intake opening of a mine, or by a waterfall in the downcast shaft. These two methods, last mentioned, however, are not in common use at the present time.

*Ques.*—Why should the circulation of air in mines be maintained continuously and not during the day, only?

*Ans.*—When the ventilator is shut down at night the circulation, in the mine, practically ceases; the mine gases accumulate rapidly, the lighter marsh gas ascending to the face of pitch headings or other high places in the mine, while the heavier blackdamp fills the dip workings or swamps and other low places. When the ventilator is started up again in the morning, it is difficult to dislodge these gases from the places where they have accumulated; and, as a result, the mine air is contaminated with gas a good portion of the day.

By maintaining a somewhat reduced circulation of air during the night, the airways and workings of the mine are clear, in the morning, when the men go to work. In some cases, the intermittent action of the circulation of air, in a mine, would cause the sweating of the roof and timbers, which always gives much trouble.

*Ques.*—Which should be the larger; the intake or return airway, in a mine? Give reasons for your answer.

*Ans.*—The return airway, in a mine, should have a larger cross-section than the intake, as far as ventilation is concerned. The reason for this is that the temperature of the return current is generally higher than that of the intake, and the volume of the air is expanded accordingly. Moreover, the volume of the return current is further increased by the presence of the gases generated in the mine. Where the return current contains much gas, the mine will be safer when the velocity of the current is reduced by increasing the sectional area of the airway. There will be less danger of a chance ignition of the gas because of a high velocity of the air current.

*Ques.*—What is the total pressure required to overcome the friction or resistance, and to produce a velocity of 400 ft. per min., in an airway 6x8 ft. and 3200 ft. long?

*Ans.*—The total pressure concerned in overcoming the resistance, in a mine, is the pressure exerted on the entire cross-section of the airway, as illustrated at *P*, in the accompanying figure. Two airways are here shown, the intake *A* and the return airway *B*, connected by the crosscut *C*, which is closed to the passage of air, by the door *D*. The cross-section of the intake at *P* is shown as being divided into square feet, and the small arrow-heads represent the pressure per square foot or the unit pressure. This unit pressure is calculated thus,

$$p = \frac{klov^2}{a} = \frac{0.02 \times 3200 \times 28 \times 0.4^2}{48}$$

$$= \text{say } 6 \text{ lb. per sq.ft.}$$

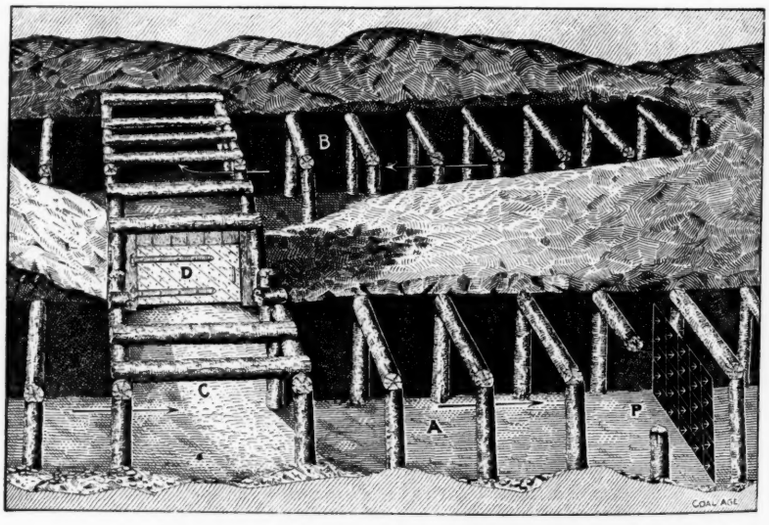
The total pressure producing circulation in this case is then

$$P = p\,a = 48 \times 6 = 288 \text{ lb.}$$

*Ques.*—How would you lay a good haulage road in the main entry to secure good results and long duration?

*Ans.*—As far as practicable, establish a good grade line, in the entry, adapted to the kind of haulage to be installed. In order to do this it may be necessary, in places, to cut the hills and fill the swamps or low places, so as to make the grade as uniform as possible. Also, the line of the entry should be made as straight as possible; and, wherever necessary, the entry should be widened so as to maintain a clear space of at least 2 ft. on one side of the track.

Before laying the track, the floor should be leveled and a ditch made on one or both sides of the track, for drainage. Track ties should be laid and ballasted. Where the bottom is soft, it may be necessary to corduroy the road. Care should be taken to allow a good headroom. Proper attention should be given to the timbering of the roadway to see that all bad places, where the roof is frail or there are fault lines, are made secure.




SURFACE REMOVED TO SHOW INTERIOR OF MINE

## A Question In Surveying

*Ques.*—If the reading of a plain compass is N 43° W, what would be the true reading, after correcting for a declination of 7 deg. east? Explain the meaning of the declination 7 deg. east.

*Ans.*—The true reading, in this case, is $43 - 7 = 36°$, this being the angle the line of sight makes with the north and south meridian line. The true bearing of the sight line is therefore N 36° W. A declination of 7 deg. east means that the needle points 7 deg. to the right of the true north and south line, or the true meridian to which all surveys on the surface or in the mine should be referred.

# Sociological Department

**For the Betterment of Living Conditions in Mining Communities**

## Beautifying a Coal Mining Camp

By F. W. Whiteside*

East of the Front Range of the Rocky Mountains in Colorado and New Mexico, the surface of the plains and the bottom of the little valleys and arroyos of the foot-hills are composed of a clay shale, which is rich and productive, wherever sufficient water is to be obtained.

### The Water Problem in Southwestern Towns

South of the Arkansas River, the rainfall and the natural flow of the streams diminish. Consequently the underflow feeding surface wells becomes uncertain. So it follows that the problem of water supply of many of the mines and towns in the southern district of Colorado is one requiring serious consideration, and one which is solved in certain cases by hauling water in railroad and wagon tanks from some rather distant source of supply.

One of the Yards at Chandler, Colo.; Such Pleasant Surroundings Make Real Homes

A few of the more enterpristing of the inhabitants surround their habitations with fences, but many are content to allow the stray cow of the camps to climb upon the front porch, or intrude her head at the parlor window.

A Village Yard at Chandler Made Beautiful at Small Expense

Where water is in barely sufficient quantity to operate the mine boilers and meet the immediate domestic requirements of the mine people, its use for irrigation is not to be considered. Hence it is, that in some of the mining camps the visitor is oppressed by the almost entire absence of growing things.

Many of the southern Colorado mines are located in the bottom of narrow mountain cañons and their thoroughfares follow the tortuous path of the water course. The street is of ample width for wagons to pass one another and the people walk in the middle of the street.

*Chief engineer, The Victor-American Fuel Co., Denver, Colo.

On the other hand, it is especially pleasing to note the care and attention which is bestowed upon the little truck patch and flower garden in the camps where water is at all plentiful. Neat fences, well kept lawns and sidewalks of cinders or broken stone seem to follow, as a matter of course.

### A Victor-American Village

Chandler mine, of the Victor-American Fuel Co., located near the town of the same name, and situated about six miles south of Cañon City, boasts of one of the most beautiful towns of any coal district of central or southern Colorado.

The tipple is situated some distance from the dwelling houses in Chandler, near the bottom of Chandler Creek Cañon. There is a constant breeze blowing either up or down the stream, which carries with it the smoke from the boilers and the flying coal dust from the tipple. The town, which is situated upon a mesa

Looking Down One of the Residential Streets from Site of New School

or table-land some 50 ft. higher is, therefore, at all times clear of the offensive smoke and dust which makes unhealthy and mars the appearance of so many coal-mining camps.

It is laid out in regular blocks. The streets are wide and clean and the sidewalks surfaced with red ash and rock, left from a burned-out rock pile—a most excellent surfacing material. The yards are surrounded, almost without exception, with neat fences of the picket variety.

### Gardens in Western Camps

Nearly every house has its garden in the back yard, while the area in front is devoted to grass and flowering vines and plants. A friendly rivalry exists between the inhabitants as to which yard can be made the most beautiful. In this way, many an indifferent one is stimulated to the extent of starting a garden and a few flowers. His interest once secured in this small measure, he adds more and more to the number and variety of his assortment until he is striving his utmost to cover every available inch with something beautiful and flowering.

The time which was formerly given to the saloon is now devoted to the garden, and in consequence at many homes, a more intimate acquaintance between the head of the house and his family is established. There is also a great difference between the home flowering and the house unadorned. Families become attached to a neat house, an attractive yard and a well kept street, and are not so prone to wander from camp to camp in search of a fancied better location or position.

### Schoolhouse As a Community Center

Chandler was both unfortunate and fortunate in the latter part of the summer, in losing its school-house by fire—unfortunate in that considerable financial loss was involved to the district, as well as a delay in getting school opened this fall, owing to a lack of suitable temporary quarters; fortunate in that the new school house which the district proposes building, will far surpass the old one and will have an auditorium in which dances and evening entertainments can be held, which add so much to the mental health and contentment of the people.

Life in a western coal camp has its limitations. No one wishes to work all the time and some recreation is necessary. An auditorium is, therefore, of great benefit. Entertainments provided by home or imported talent, followed by a short dance, will make the vision brighter for a fortnight to come.

The experiment of stimulating the interest in a neat, well kept town, of flowers, vines and plants, where practicable, will have a very beneficial effect upon the class of miners who will seek and remain in a camp. A small prize offered for the prettiest yard will work wonders in getting the movement started, and after a healthy start is made, the balance is a simple matter.

## First Aid Meet of the Susquehanna Coal Company

The four companies known as the Susquehanna Coal Co., the Mineral Railroad & Mining Co., the Summit Branch Mining Co., and the Lytle Coal Co., usually termed the Pennsylvania R.R. interests, held their third annual inter-company first-aid contest at Edgewood Park, Shamokin, on Sept. 14, 1912.

The meet started at 9 a.m. with the elimination contests in which no less than 43 separate teams contested in the following four events:

One-man event:—Fracture of skull, hemorrhage from the ears. Rescue and carry 10 ft. Time 5 minutes.

Two-man event:—Incised wound of the back extending from the right shoulder blade down across the back to the left and around to the belly button. Time 5 minutes.

Three-man event:—Simple fracture of the left forearm and right collarbone. Time 10 minutes.

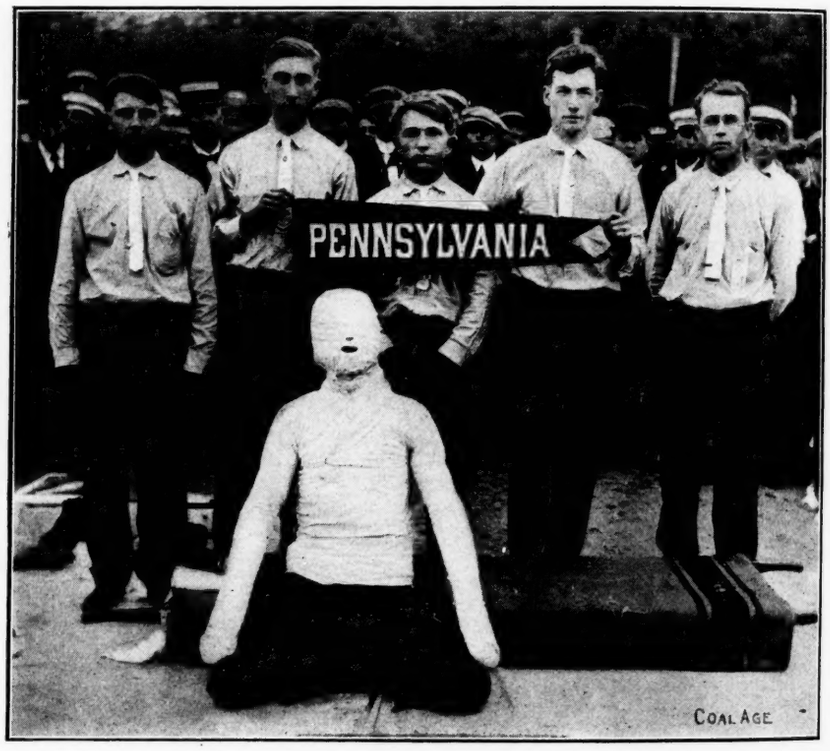
Full-team event:—Fracture or dislocation of spine, fractured jaw, lacerated wound of left temple with bleeding in spurts, dislocation of left elbow, forearm found in position of right angle. Dress and carry 50 ft. Time 15 minutes.

### Method of Elimination

In the elimination contests the teams from each colliery competed against each other, and the best team from any mine in any event was privileged to compete in the final contest in the event requiring the same number of men. Thus Nanticoke No. 5 had 4 teams, representing the outside men, No. 4 slope, No. 2 shaft and Stearns.

In the one- and two-man contest and the full-team event, No. 2 shaft made the best records. Stearns, however, led in the three-man event. So No. 2 shaft was permitted to enter the final contests in the three events mentioned, but Stearns was allowed to enter in but one.

By this method fourteen teams were entirely eliminated, leaving one team to compete in four events, nine to compete in three, six in two and 13 in one. Luncheon took place at 12 o'clock, thus separating the elimination from the final contests.




Pennsylvania Colliery Outside and No. 1 Slope Team—Susquehanna Coal Co.

In the afternoon, though there were 29 contestants in the events as a whole, yet there were only fourteen teams competing in each event. The events were as follows:

One-man event:—Laceration of the scalp, left shoulder, left elbow and wrist. Time 8 minutes.

Two-man event:—An outside stableman has been kicked by a mule and received a compound fracture of the middle of the left leg with bleeding in spurts. (Use long splints.) Time 10 minutes.

Three-man event:—Lacerated wound over the shin bone; simple fracture of the left kneecap. Time 10 minutes.

Full-team event:—Compound fracture of the left thigh; severe burn of face, neck, right-hand and forearm. Dress and carry 50 ft. Note—Dressing for burns to be in the following order: 1, picric acid gauze; 2, wax paper; 3, cotton; 4, bandage. Time 15 minutes.

The score for the final contest follows.

SCORES OF FINAL CONTESTS

| Collieries and Corps | One Man Event | Two Man Event | Three Man Event | Full Team Event |
|---|---|---|---|---|
| 1. Nanticoke No. 5 | | | | |
| No. 2 Shaft | *98 | 88 | | 86 |
| Sterns | | | 86 | |
| 2. Nanticoke No. 7. | | | | |
| Outside | 86 | | | |
| No. 1 South Shaft | | | 92 | |
| No. 1 North Shaft | | 83 | | 80 |
| 3. Glen Lyon No. 6. | | | | |
| No. 6 Tunnel | †97 | | | 88 |
| No. 7 Shaft | | 81 | 87 | |
| 4. William Penn. | | | | |
| Outside | | | | 90 |
| Drifts | 77 | | 85 | |
| No. 2 Shaft | | 92 | | |
| 5. Richards. | | | | |
| Outside | | | 88 | |
| No. 8 Slope | 79 | 95 | | 82 |
| 6. Hickory Ridge. | | | | |
| Outside | | 87 | | |
| Inside | 83 | | †97 | 93 |
| 7. Pennsylvania. | | | | |
| Outside and No. 1 Slope | 87 | *99 | 96 | 92 |
| 8. Luke Fidler. | | | | |
| Outside | | 84 | *98 | 91 |
| No. 3 Level | 83 | | | |
| 9. Scott. | | | | |
| Outside | | 93 | 89 | †94 |
| Inside | 85 | | | |
| 10. Cameron. | | | | |
| Outside | | 97 | | 93 |
| Shaft | 85 | | 93 | |
| 11. Hickory Swamp | | | | |
| Outside | | †98 | 94 | *95 |
| Inside | 84 | | | |
| 12. Lykens. | | | | |
| No. 1 | 86 | | 95 | 93 |
| No. 2 | | 87 | | |
| 13. Williamstown. | | | | |
| No. 1 | 84 | | 95 | 92 |
| No. 2 | | 91 | | |
| 14. Lytle. | | | | |
| Inside | 81 | | 88 | 85 |
| Outside | | 87 | | |

*First Prize. †Second Prize.

One-man event:—Nanticoke No. 5, No. 2 Shaft—John Wadzinski; Russel Ogan, subject.

MEDAL AWARDED AT SUSQUEHANNA MEET

Two-man event:—Pennsylvania, Outside and No. 1 Slope—Ray Penman, captain; Patrick McCarthy; Frank Ramsey, subject.

Three-man event:—Luke Fidler, outside—Joseph Eyster, John Davis, James Campbell; Charles Weaver, subject.

Full team event:—Hickory Swamp, outside—P. H. McGinnis, captain; Ralph B. Platt, William Dockey, Clyde Castetter. Thomas Elliott; John Anderson, subject.

The prizes were presented to the winners in the one- and two-man events by A. L. Williams, of Wilkes-Barre, Penn., and in the three-man and full-team events by F. B. Moser, of Shamokin, Penn.

The time fixed for events is merely intended to compel reasonable promptitude. It is more than ample for completion of all the work and it is not thought that it in any way engenders careless, hurried or inefficient treatment. The bandaging was done with the triangular bandage and it is believed there are few, if any, teams in the country which can do better triangle work than these Pennsylvania men.

The men did not know exactly what demonstrations would be required of them, but they did understand that any one of four tests might be given in each separate event.

Thus the program stated that the one-man events might be:

| | Min. |
|---|---|
| 1. Rescue a man found unconscious from gas, carry 20 feet. In presence of judges demonstrate the Sylvester and Prone methods of artificial respiration. Note.—No time allowance | |
| 2. Laceration of the scalp, left shoulder, left elbow and wrist | 8 |
| 3. Fracture of skull; hemorrhage from the ears. Rescue and carry 10 feet | 5 |
| 4. Lacerated wound over the head of the left thigh bone. A mule kick in the right side of the abdomen | 5 |

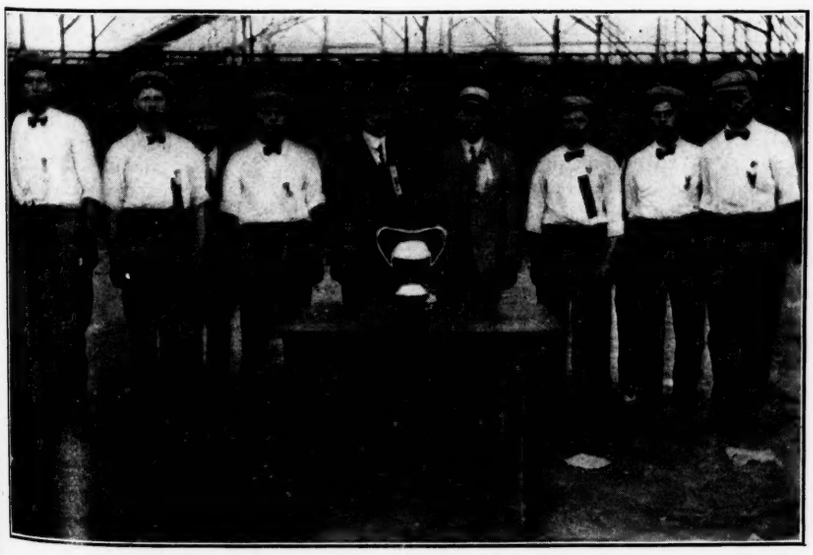
It will be noted that item 3 was chosen for the elimination contest and item 2 for the final.

The reader will note with approval that both the Sylvester and Prone methods are taught. It would appear that both should be part of the instruction of every first-aid man and every one should know the appropriate time for their respective use, because the Sylvester mode is unsuited for men with injured arms, and the Prone method not desirable where legs are broken.

French-bronze medals were given to all the winners in the final one-, two- and three-man events. A halftone accompanying this article shows one of these medals. The winners of the full-team event received a silver cup and gold-bronze medals identical in form with those received by the winners of the other events. A silver medal was awarded to the surgeon of the winning team.

The cup has to be won three times in order to become the permanent property of the winning corps. Glen Lyon held it last year and Hickory Swamp outside employees received it at this meet.

An illustration will be found showing this first-aid team. Reading from left to right we have: P. H. McGinnis, captain; Clyde Casteter, John Hesser, foreman; William Dockey, Dr. J. M. Maurer, W. R. Reinhardt, superintendent; Ralph Platt, Grant Elliott, assistant foreman; Thomas Elliott and John Anderson.



TEAM OF THE HICKORY SWAMP COLLIERY WITH DOCTOR AND FOREMEN; MINERAL RAILROAD & MINING CO.

It is not to be expected that mule haulage will ever entirely disappear from the anthracite mines of Pennsylvania, as there are some kinds of work that can be done more economically by animal power than by any other method, as for instance, in gangways yielding only a small amount of coal. Steam as a haulage power in the anthracite field is decreasing, compressed air is at a stand still while electricity is on the increase.

# Exploiting Nevada's Coal Deposits

By Al. H. Martin

From the first days of the white man's tenancy of California and Nevada, a persistant search for commercial coal has prevailed. With vast deposits of iron and other ores inviting industrial activity, the absence of a satisfactory fuel has been keenly felt. Several small deposits have received perfunctory attention from time to time, but the meager extent and poor quality of the coal has consistently militated against systematic development. Within the past few years Californians have generally ceased the search for coal and striven to make crude oil a substitute. But in Nevada the development of the southern portion of the state, following the discovery of Goldfield and Tonopah stimulated the demand for a cheap and satisfactory fuel. Coal deposits formerly neglected have been accorded new attention, and it seems that at least one coal bed is destined to play its part in the progress of the state.

Near Coaldale, in the northern portion of Esmeralda County, the Nevada Coal Co. is actively developing the most promising coal beds thus far demonstrated in Nevada. A portion of the ground is under lease to the Nevada Coal & Fuel Co., and small shipments of fuel to Tonopah and Goldfield for domestic consumption are being made. About $50,000 has been expended in developments and the deposit opened in pla es to a depth of 100 ft.

It is stated five distinct strata have been demonstrated, with work confined largely to the two most promising. In the surface workings the veins are badly crushed and broken, but as depth is attained, the strata become more distinct and uniform.

The work thus far accomplished shows the commercial seams to range from 4 to 6 ft. thick, and the product is said to be comparatively free from an excess of ash and sulphur. The coal is semi-bituminous, with the product from one seam showing coking properties.

The seams have an easterly dip, and the owners estimate the 3000 ft. of developments accomplished have exposed approximately 50,000 tons of commercial coal, with indications favorable for the opening of good reserves. At present the deposit is only a good prospect, but the owners plan more comprehensive developments for the immediate future. Under present conditions, all fuel is shipped into this portion of Nevada.

It was recently reported that the owners and other strong interests were contemplating using the coal for the development of power to supply the mines of southern Nevada. Under this plan electric generators are to be operated by heat energy, and electricity sold to the mining companies in direct competition with the electric current now generated by water power.

Power commands exceedingly high rates in this portion of Nevada, the price for electricity being $6 per horsepower-month. With labor and water also commanding high costs, it is not strange that the mining companies are inclined to entertain interest in a proposition to reduce the power expenses.

The deposit in question was first located nearly 30 years ago by a German prospector named William Groezinger. Others subsequently became interested and U. S. patents were obtained to a considerable area. The apathy pervading Nevada for two decades naturally detracted attention from these seams, and it has only been recently that comprehensive work was commenced.

The field lies about 35 miles from Tonopah and 60 from Goldfield, near the Tonopah & Goldfield R.R. P. V. Rovianenk, of Pittsburgh, and L. K. Koontz, of Goldfield, are the heaviest stockholders in the Nevada Coal Co., and it is owing to the enterprise of these men that the promising deposit has been given fair attention.

# Two German Sprinkling Devices

We illustrate herewith two newly patented devices for mine sprinkling systems which are both shown in *Glückauf*, of Essen, Germany, Sept. 21, 1912.

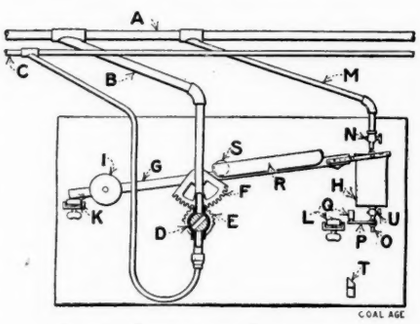



Fig. 1. Automatic Sprinkler

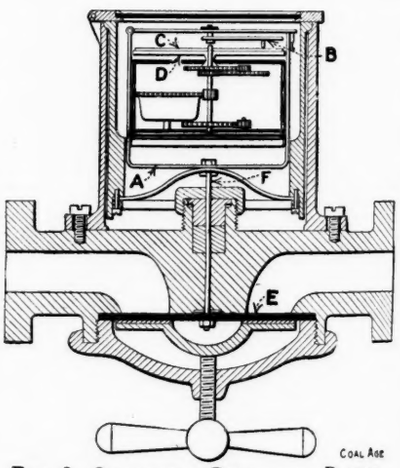



Fig. 2. Sprinkler Recording Device

The first is an automatic contrivance for turning on and off the sprinkler system intermittently, allowing it to play for a proper interval. The patentees are Karl Rosslau, of Gelsenkirchen and Fredrich Frie, of Herne, Westphalia.

The water main *A* connects with the sprinkler pipe *C* through a branch pipe *B* in which is a cock *D*, whose plug is controlled by a double-armed lever *G* through a pair of gear sectors *EF*. On one arm of the lever is a weight *I*, and on the other swings a vessel *H* with an outlet pipe in which are a throttling cock *U* and an outlet cock *O*. Above the vessel *H* are the nozzle and the cock *N* of a pipe *M* that branches from the main *A*. Beside the vessel are placed, one above the other, stops *QT*, for a lever *P* attached to the plug of the cock *O*, so that when the vessel is at its highest position the cock shall be closed and when lowest it shall be open. There are provided also stops *KL* for the lever *G*.

For the illustrated position of the vessel the cocks *D* and *O* are closed, so that no water enters the sprinkler pipe *C*, and the vessel is gradually being filled. As soon as it is full it sinks and turns the lever *G*. Thereby the cock *D* is opened and water enters the sprinkler pipe *C*. When the vessel has reached its lowest position the cock *O* is opened by the stop *T* and the water flows out of the vessel with a velocity determined by the degree that the cock *N* is open. When a certain quantity of water has escaped, the weight *I* turns the lever *G* back into the illustrated position, whereby the cocks *D* and *O* are closed.

To retard the upward movement of the vessel *H* and prolong the time of sprinkling there is placed on the arm of the lever *G* that carries the vessel *H* a weight *S* which runs in a groove *R*.

The other invention, Fig. 2, is a clock recorder for verifying the fact, time and duration of sprinkling. The concern owning the patent is the Schlesische Gruben- und Hüttenbedarf-G. m. b. H., of Kattowitz, Upper Silesia.

The recording clock consists of an ordinary clock rearranged by substituting for its hour hand a plate *D* which carries a suitably printed paper disk *C*. Above the minute-hand spindle a pen *B* is pivoted to the frame *A*, the bottom of which is connected by the spindle *F* with a diaphragm *E* of the sprinkling pipe valve. If this valve is opened the diaphragm, and with it the frame *A*, is depressed by the force of the sprinkling water and the pivot of the pen *B* is coupled to the minute-hand spindle. Thus are recorded the time and duration of the sprinkling.

Note—Translated for Coal Age by E. P. Buffet.

# Coal and Coke News

**From Our Own Representatives in Various Important Mining Centers**

## Washington, D. C.

That a joint railroad effort is being made to secure an advance in rates on practically all of the lines, and that this extends to the coal roads as well as to the others, is the belief of officials of the Interstate Commerce Commission, who are in touch with the situation now prevailing in the commercial and financial world. They assert that various signs of this attempt are visible, one of them being the development of a propaganda in various parts of the country apparently designed to show the necessity of getting some increase in the charges of the roads in order that a reasonable degree of prosperity may be maintained by the lines among those who are dependent on them for business. Prominent among the pieces of evidence that are mentioned by members of the commission in support of its assertion in this matter are the facts connected with the activity of railroad business associations. Speeches and arguments for advanced rates are being numerously presented to the commission beyond doubt, and apparently for the purpose of laying the foundation for a showing with respect to bad financial conditions on the lines. This belief on the part of the commission is at least founded to this extent on fact that in the past there have been times when such an agitation was earnestly urged by those who stood to profit by it. For example, in the period after the panic of 1907, there was what seems to be a regular growth of demand for higher rates, the movement being then carried forward by some of the most prominent men in the railroad world. It is not probable that any such prominent figures will today be seen fostering the movement as there were then, at least not in the same open way. But that the effort is being earnestly made to get some recognition of the roads, and thereby to improve the railway-supply business there seems to be no doubt in the minds of government officials. There is an evident disposition to make the most of the car-shortage argument and to attribute this car shortage unequivocally to the inability of the roads, as a result of depressed revenues, to buy equipment, when they otherwise would do so.

One road that is at all events showing a disposition to equip itself with new cars is the Boston & Albany, which, according to information sent to the commission, is about to add 800 all-steel general-service gondola or coal cars to its outfit, beside making large additions to its ownership of locomotives and other equipment. The same policy is being followed by other roads, whether as a concession to the loud outcries about lack of means of transporting coal or for some other reason. The commission will find, it is claimed, that the coal roads are doing quite as well in this matter of equipment as are any of the other lines or as is being done in any other method of transportation.

### Supreme Court Decisions

Current belief is that the Supreme Court of the United States will be likely to hand down a decision in the so called "hard-coal case," possibly on Oct. 21, a date when it is expected that a large number of cases that have been under advisement during the summer will be settled. The hard-coal case is one of these. The court has undoubtedly been devoting a great deal of time to this case, recognizing that a considerable number of moot questions arising under the Interstate Commerce Act will be influenced by the decision reached in connection with it. It is not likely that the decision in the case will wholly settle the points at issue, as there are a number of them that are expected to come up in different forms later on.

### Bureau of Labor Making Progress

Further progress with the coal investigation has been reported by the Bureau of Labor to the higher authorities of the Department of Commerce and Labor. It is now considered certain that the report in this matter will be a good deal more extensive than had at first been expected. Not only has the length of time occupied with it been much greater than was looked for, but the number of agents sent into the field has been larger than was estimated to be necessary at the outset. Commissioner Neill is now understood to be intending to make the report practically an epitome of the conditions prevailing in the coal fields, summing up all that has occurred since the award in the coal strike of 1902.

## Wilkes-Barre, Penn.

John Mitchell, former leader of the United Mine Workers of America, and Thomas L. Lewis, who was also head of the national organization, will not go before the union as candidates for the presidency. With the time limit at hand for candidates to declare themselves, John P. White, of Oskaloosa, Iowa, and A. Bradley, of Mt. Olive, Ill., are the only men in the field who seek the office now held by White.

It has been predicted that Tom Lewis would again enter the contest. At the time of the suspension in the coal fields it was commonly whispered that friends of Lewis were taking advantage of conditions then existing to further his cause for the national leadership.

The time for filing nominations has come and Lewis has not been pushed forward as a candidate. Many of his followers have been anxious to see him in the field, but he has advised against it and refused to oppose President John P. White, who defeated him for the office.

Friends of John Mitchell have been active in his behalf and they have endeavored to bring him into the contest. He has refused to consider the proposition and the race will be made by White and Bradley.

Bradley is practically unknown in this region. Word comes here that he is popular in the West, but the indications are that President White will be honored with another election, and he is almost certain to receive the solid vote of the anthracite fields.

Frank P. Hayes is the only candidate for the office of vice-president, which office he now holds, and there is no danger of anyone opposing him in the coming election.

Three candidates are in the field for the office of secretary-treasurer. They are Edwin Perry, the present incumbent; William Green, of Ohio, at present the national statistician, and Joseph Richards, of Ohio.

William Green is widely known in the Anthracite fields and his splendid work during the time of the negotiations with the operators, beginning in last April, won him many friends among the mine workers of this section.

### Petty Strike at Exeter Colliery

Six hundred men and boys inaugurated a strike at the Exeter colliery of the Lehigh Valley because James R. Gorman, one of the four stationary engineers, refused to become a member of the union. The three other engineers joined the

ranks of the mine workers, but Gorman stubbornly refused to take out a membership card. The strike was on a few days, and Gorman was given to understand by the company officials that he was not compelled to join the union unless he wished to. Finally Gorman reached the conclusion that he would resign his position. This he did and the union ordered the men and boys back to their posts. Gorman declared he was willing to give up his position rather than be forced to become a member of the organization against his will.

OPPOSED TO SMALL STRIKES

Petty strikes in the anthracite regions are bitterly opposed by the district and national officers of the United Mine Workers organization. Following the Panther Creek trouble, President Thomas Kennedy, of District No. 7, was called to West Virginia, where he conferred with President White over the strike.

White declared at this conference that he would not sanction any strike over petty matters, such as was the case in Panther Creek, where the union men went out because two men at one of the collieries refused to join the union. He pointed out that the new agreement with the operators permits the union to recruit its ranks, but does not permit the calling of petty strikes. He wisely pointed out that such action might result in the abrogation of the contract between companies and men.

When President Kennedy returned he called a meeting of the district officers and notices were sent out to all local unions declaring against petty strikes. The message was sent to local unions that whenever grievances arise at a colliery the proper course to pursue is to endeavor to adjust them with the officials. If this fails, the next step is to place the matter in the hands of the colliery management where it will be given the consideration it deserves.

In their letter the district officers declared: "When numerous petty strikes occur, they lose their effectiveness. Instead of their having a good effect on grievances, they in many cases militate against them, and in some instances take the foundation from under the committee. We, therefore, join with the national president in expressing the hope that petty strikes in District No. 7 will be abolished."

## Pennsylvania

ANTHRACITE

*Philadelphia*—A complaint against the Philadelphia & Reading Ry. Co. alleging excessive freight rates on coal has been filed with the State Railroad Commission. The complaint calls on the commission to issue an order recommending that the rate to be charged for transportation of anthracite from Shamokin, Pottsville, Shenandoah, Mt. Carmel, Ashland, and Mahanoy City to Philadelphia be not more than 85.7c. per ton.

*Hazleton*—The case of the Pennsylvania Brewing Co. against the Lehigh Valley Coal Co. before Judge Garman, of Luzerne Co., was terminated by the court's granting a compulsory non-suit. The case concerned an artesian well sunk on the property of the John Arnold Brewery, at Hazleton, Penn. This well passed through a vein of coal owned and mined by the defendant company. In the process of mining the pipe was broken and the well ruined. The court held that the water under the vein of coal was not the property of any person, and that the cutting off or interruption of this supply does not constitute a trespass that the law can redress.

On Oct. 3, John Markle presented to the city of Hazelton, Penn., a free public library, 44x66 ft. in size, built of white marble in the Roman-Ionic style of architecture. This building embodies all the latest features in library construction and was erected to the memory of Mr. Markle's parents. It is proposed to use one of the rooms in this building as a miners' club room.

*Harrisburg*—The forty-eight inspectors of anthracite and bituminous coal mines in Pennsylvania met here Oct. 8 for their annual conference and to discuss ways and means for lessening the number of accidents, especially those due to fire, gas explosions, and electricity.

*Scranton*—The ordinance creating a bureau of mine inspection to be attached to the Department of Public Works has finally become a city law. The object of the measure is to aid in the enforcement of ordinances already passed prohibiting the mining of coal under public highways, city, county, state, and federal buildings, churches, schools and buildings where public meetings are held.

*Wilkes-Barre*—Part of the Black Diamond mine of the Delaware & Hudson Co. has been in idleness because miners and laborers have been stricken with terror by reports of a ghost in the underground workings. Officials have been unable to get the men back to their places.

BITUMINOUS

*Uniontown*—Eight bodies were removed from the Polecat mine of the Superba Coal Co., on Oct. 8. This is where 15 men lost their lives in the mine flood of July 24 last.

*Windber*—First-aid training at Windber includes an experimental mine set apart by the Berwind-White Co. It is planned to conduct atmospheric tests and also intended to train the crews in mine-rescue work. To this end the first-aid department has been equipped with full apparatus, including helmets and oxygen tanks.

*Somerset*—The mines of the Fisher Smokeless Coal Co., about a mile and a half north of Somerset, are again being operated, after an idleness of nearly two years. The mines have been leased by Thomas B. Boswell, of Baltimore.

*Evans City*—The Brewster coal mines, located near Evans City, will greatly increase their production in the near future, as fifty additional men will be put in the mines as soon as they can be secured. A number of improvements have been made, and the plant is now in shape to turn out a good tonnage.

*Punxsutawney*—What is known as the large coal tract extending from Horton Run workings, has been thoroughly tested by Clark Brothers Coal Mining Co., of Glen Campbell, and this well known firm is engaged at the present time in putting in a number of drifts which are located somewhere near Smithport or Hortons postoffice, in Indiana County.

*Pittsburgh*—By the terms of an alliance between the New York Central Lines and the Western Maryland R.R., coal from the Pittsburgh district will soon be laid down in Baltimore and other Eastern tidewater destinations in competition with coal from the Virginia, West Virginia, Kentucky and Tennessee fields.

A mine health and sanitation bureau is to be established in Pittsburgh by the United States Government. The work of the new bureau is to study the diseases peculiar to miners, the health conditions at the mines, in the homes of the men, the effects of poisonous gases on the human system, and the best methods of instruction in first-aid-to-the-injured work at the mine.

## Maryland

*Baltimore*—The Georges Creek Coal Co., Incorporated, of Cumberland, Md., has leased 1500 acres of coal land in Logan County, West Virginia, and will open mines, with a daily output of about 2000 tons.

## West Virginia

*Charleston*—The report that state militia was being used to evict miners from coal-company houses on Cabin Creek has been vigorously denied by Governor Glasscock and Adjutant-General Elliott.

It is reported that fresh supplies of rifles and ammunition are being imported by the striking miners.

## Alabama

*Birmingham*—The car shortage, which has affected the Birmingham district seriously in the past few weeks, is still acute, and several of the mines in this vicinity are compelled to stop operations one or two days a week.

## Illinois

*Chicago*—On Oct. 6 fire destroyed 5000 tons of coal and burned over a four-acre coal yard at the southern edge of the city belonging to the Philadelphia & Reading Coal & Iron Co.

*Joliet*—The Joliet Coal Products Co. is shipping 15 to 20 cars of coke daily from its new plant above the city. Much trouble is experienced in getting cars enough for the shipments, which go in all directions. The officials say that there is a wide market for coke, and that they could dispose of many times the product of the new ovens if they had the coke for sale.

*Springfield*—Indications are that the proposed deal by which the coal mines of Sangamon County were to be merged under one head has fallen through, and has gone the way of similar attempts made in previous years to bring about such a coalition.

## Indiana

*Terre Haute*—Mines in the Terre Haute region are running short of their capacity, and orders are being held up for lack of supplies on account of the acute situation in the car shortage.

The most extensive deal in Fayette Township coal lands was recorded Oct. 5, when the Grant Coal Mining Co. purchased the mineral rights in several thousand acres of valuable farm land. The consideration amounted to $109,644, which is considered to be the highest mark ever recorded at any one time in Vigo County for a straight-out deal in coal lands.

Nearly four hundred men will be employed by the Vandalia Coal Co. to work in the new mine near Liggett in Vigo County. This property was recently purchased from the Burnes and Ray Co. The company expects to have the mine in operation in a short time.

Shortage of cars at the Wabash mine and a broken fan at the Deep Vein mine caused both mines to be closed down Oct. 3.

*Linton*—The Vandalia Mine No. 9 made a new record for Indiana on Oct. 8, breaking all previous records. In eight hours the men employed in this mine loaded and hoisted 2173 tons of screened coal. The best previous record of output in Indiana was 1964 tons.

## Tennessee

*Knoxville*—Hundreds of miners are expected to visit Knoxville on Oct. 26, when the first annual field-day exercises of the Tennessee Society of Mine Foremen will be held. It is expected that the railroads will give excursion rates on this occasion, and the mines in the near vicinity will be shut down for the day.

The Chilhowee Mountain Mining & Manufacturing Co., which controls a tremendous tract of coal and timber land about 25 miles south of Knoxville, Tenn., has announced that it will remain merely a holding corporation for a time. The company was formed in 1911.

## Montana

*Butte*—United Mine Workers' locals have ratified a two years' wage agreement with coal operators in Montana and northern Wyoming providing for small increases.

## Wyoming

*Lander*—A lease of 2480 acres of coal lands at Lander, Wyo., has been made to the Owl Creek Coal Co. by the Federal Government. This is said to be the first actual lease of mineral land in the public domain by the government to individuals. The Bureau of Mines retained absolute control over the operation of the mine as to methods of mining and provisions for safety.

## Idaho

*Kellogg*—After apparently being conquered, the fire in the Bunker Hill & Sullivan mine broke out afresh, Oct. 8, when five rescuers with helmets were caught on the 1200-ft. level, but by using their supply of oxygen managed to escape through a side tunnel. They were searching for the body of a missing pump man.

## Personals

Albert H. Fay, of the U. S. Bureau of Mines, has been transferred from Pittsburgh, Penn., to the Washington office of the bureau.

Harry W. Montz has been promoted from assistant division engineer to division engineer of the Wyoming Division, Lehigh Valley Coal Co.

Herbert L. Towle, specialist in the advertising of technical goods, on and after Oct. 15 will be located in the Philadelphia National Bank Bldg., 421 Chestnut St., Philadelphia.

Dr. Henry M. Payne returned last week from the Yukon and Klondyke gold fields, where he was engaged during the past summer in mining, consultation and fuel-research work.

H. R. Laughlin has been appointed superintendent of the Sandy Valley & Elkhorn division of the Baltimore & Ohio R.R., with headquarters at Jenkins, Ky. The appointment has gone into effect.

Joseph Virgin has severed his connection with the Plymouth Coal & Mining Co., of Plymouth, W. Va., by whom he has been employed as mine superintendent for nearly ten years, and is now at his home at Bancroft, W. Va., looking after his store interests.

Howard D. Mannington, formerly secretary of the Ohio Coal Operators' Association, a traffic expert of reputation, has issued the first number of *The American Shippers Gazette*. The new magazine will be published every month in the interest of the shipping public and considerable space will be devoted to coal-trade news.

A testimonial dinner was given on Oct. 11, in the Plymouth Calvinistic Church, in honor of Thomas R. Evans, superintendent of the Parrish Coal Co. mines at Plymouth, Penn., who has just rounded out his seventieth year. During the evening Mr. Evans was presented with a handsome morris chair. He has been connected with the Parrish Coal Co. for over 30 years.

## Construction News

**Marianna, Penn.**—The Pittsburgh-Buffalo Co. is building 500 more ovens at Marianna, making 1,000 in all.

**Wilkes-Barre, Penn.**—A new breaker is being erected at the East Boston mines to take the place of the one destroyed by fire about a year ago.

**Vincennes, Ind.**—An architect is now preparing plans and specifications for a wash house for the Indian Creek Coal Mine that will cost $6,000. The company is contemplating the sinking of another shaft to increase the capacity to 25,000 tons daily.

**Jenkins, Ky.**—The Carolina, Clinchfield & Ohio R.R., which is now being extended from Dante, Va., to Elkhorn City, Ky., about 35 miles, contemplates the construction of an independent line to reach the mines of the Consolidation Coal Co. near Jenkins, Ky.

**Brownsville, Penn.**—Four contractors are at work at the scene of the Reliance Coke plant a short distance south of Brownsville on the Washington County side of the Monongahela River. Two shafts are being sunk. A tipple is to be built, together with a number of houses.

**Connellsville, Penn.**—The H. C. Frick Coke Co. is advertising for bids for the construction of a flood wall at the Lemont No. 1 mine, 100 ft. long, 14 ft. high and 2 ft. thick. The wall is a part of the plan of the Frick Co. for flood protection. The company is also advertising for bids on 3,000 ft. of fence at Lemont furnace.

**Pottsville, Penn.**—Engineers of the Reading Co. have completed plans for the largest dam in the anthracite region. It will be above the immense reservoirs leased by the Reading Co. of the Lehigh Coal & Navigation Co. and will be at least 125 ft. high and extend across the valley from mountain to mountain, a distance a little short of one mile.

**Hull, England**—The new joint dock of the Northeastern & Hull and Barnsley Rys. is now being rapidly pushed to completion and will be one of the largest and finest docks in the United Kingdom. Its water area will be 51¼ acres. There are two dry docks in construction and six coaling berths. Coal will be conveyed direct from the hopper to the hold of the vessel and each conveyor will be capable of handling 800 tons per hour.

**Whitesburg, Ky.**—Officials of the Lexington & Eastern railroad at Whitesburg, Ky., have corroborated a report to the effect that a mile and one-half branch of the road is to be built up Port Creek, two miles above Whitesburg, in order to tap rich coal beds, as well as timber tracts and building stone. The survey already has been made, and it is understood that construction work will begin at once. The projected branch will be the first to be built around Whitesburg.

**Wilkes-Barre, Penn.**—Ground has been broken for the erection of a new breaker at Franklin Colliery of the Lehigh Valley Coal Co. at Wilkes-Barre, Penn. The breaker will be of 1500 tons capacity, steel construction throughout and equipped with modern machinery. The loading of the coal into railroad cars will be done by a belt running through the breaker, similar to the method adopted by the company at its Mineral Spring Colliery. An Ottumwa box-car loader will also be installed.

**Whitesburg, Ky.**—With the completion of the extension of the Lexington & Eastern R.R. to Whitesburg, Ky., after two years' work, holders of coal lands in that section are preparing for extensive developments. The Mineral Development Co., of Philadelphia, is planning gigantic development of its coal lands near Whitesburg, and will follow closely behind the lead of the Consolidation Coal Co. in that regard. It is expected that the Lexington & Eastern extension from Whitesburg to McRoberts will be completed in about thirty days.

## New Incorporations

**Nokomis, Ill.**—The Nokomis Coal Co. has been dissolved.

**Kansas City, Mo.**—Mattie Co. Mining Co., Kansas City, capital $6000. Incorporators, Theo. C. Petzser, James T. Robinson, F. H. Danlade.

**Peoria, Ill.**—The Groveland Coal Co., of Peoria, $5,000 capital, are mining and dealing in coal. Incorporators, Charles J. Off, John R. Halbert, and Walter Off.

**New York City**—Simon Nager, Jr., Icn. of Brooklyn, N. Y., coal and coke merchants, $100,000. Frederick M. Livingston, John C. Williams, Simon Nager, Jr., Rockville Center, L. I.

**Williamsport, Penn.**—Application will be made by John A. Vandergrift, Scott Jenkins, M. T. Day, Fred A. Midgle and C. H. McCauley Jr., 10th day of Oct. Rock Run Coal Company.

**Louisville, Ky.**—The Eastern Kentucky Coal Co. of Louisville, Ky., to deal in coal and other fuel. Capital $10,000. Incorporators, Allen Smith, George Stegard, and others of Cincinnati, O.

**Phoenix, Ariz.**—Charter has been granted to the States Mutual Consolidated Mining Co. of Phoenix, to mine coal and other minerals; capital, $5,000,000; V. A. Brewer, pres.; Robt. McKee, secretary.

**Columbus, Ohio**—The William Job Coal Co., Columbus, O., mining and producing coal, oil, gas, clay and other minerals, William Job, C. C. Williams, Henry C. Taylor, Cleo Evans, Mary F. Fallon; capital $50,000.

**Logan, W. Va.**—Island Creek Coal Co. of Logan, to develop coal and other mineral lands in Logan district of Logan county. Capital $50,000. Incorporators are W. C. McCall, A. C. McOnnaughy, B. R. Simms, R. H. Hamiland, F. W. Gerchaw, all of Logan.

**Osceola Mills, Penn.**—Application will be made by J. F. Steinman, John Benson and Harry Boulton for the charter of an intended corporation to be called the Hale Coal Co. The same incorporators have applied for a charter for the Lady Smith Coal Mining Co.

**Welch, W. Va.**—New Pocahontas Coal Co., of Welch, W. Va., to mine coal in McDowell county, W. Va. Authorized capital $25,000. Incorporators W. E. Deegans, and William Brown, of Glen Jean, W. Va., J. H. McCullough, Jesse Fay and O. C. Hoffman of Welch.

**Vaughan, W. Va.**—Greendale Collieries Co., of Vaughan, W. Va., to mine coal and manufacture lumber in Nicholas county, W. Va., Capital $100,000. Incorporators J. E. Griffiths, of Vaughan, W. Va., J. A. Shewey, Charles Shewey and R. K. Morton, of Charleston, W. Va.

**Fairmount, W. Va.**—The Tri-County Coal Co., of Fairmont, W. Va., to mine coal in Marion, and Taylor counties, W. Va., Capital $5,000. Incorporators, Thomas C. Weaver and A. V. Weaver, of Canonsburg, Penn.; George R. Kirk and J. M. Roberts, of Pittsburgh, Penn., and H. P. Keenan, of Boothville, W. Va.

**War Eagle, W. Va.**—Indian Land Co. of War Eagle, Mingo county, to operate coal mines, develop all kinds of mineral lands, manufacture lumber, etc. Capital $100,000. Incorporators are James R. Gilliam, Jr., of Lynchburg, Va., W. W. Hughes, of Welch; C. W. Campbell, of Huntington; Guy White and Wells Goodykoontz, of Williamson.

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**Whitesburg, Ky.**—Officials of the Lexington & Eastern railroad at Whitesburg, Ky., have corroborated a report to the effect that a mile and one-half branch of the road is to be built up Port Creek, two miles above Whitesburg, in order to tap rich coal beds, as well as timber tracts and building stone. The survey already has been made, and it is understood that construction work will begin at once. The projected branch will be the first to be built around Whitesburg.

**Wilkes-Barre, Penn.**—Ground has been broken for the erection of a new breaker at Franklin Colliery of the Lehigh Valley Coal Co. at Wilkes-Barre, Penn. The breaker will be of 1500 tons capacity, steel construction throughout and equipped with modern machinery. The loading of the coal into railroad cars will be done by a belt running through the breaker, similar to the method adopted by the company at its Mineral Spring Colliery. An Ottumwa box-car loader will also be installed.

**Whitesburg, Ky.**—With the completion of the extension of the Lexington & Eastern R.R. to Whitesburg, Ky., after two years' work, holders of coal lands in that section are preparing for extensive developments. The Mineral Development Co., of Philadelphia, is planning gigantic development of its coal lands near Whitesburg, and will follow closely behind the lead of the Consolidation Coal Co. in that regard. It is expected that the Lexington & Eastern extension from Whitesburg to McRoberts will be completed in about thirty days.

## New Incorporations

**Nokomis, Ill.**—The Nokomis Coal Co. has been dissolved.

**Kansas City, Mo.**—Mattie Co. Mining Co., Kansas City, capital $6000. Incorporators, Theo. C. Petzser, James T. Robinson, F. H. Danlade.

**Peoria, Ill.**—The Groveland Coal Co., of Peoria, $5,000 capital, are mining and dealing in coal. Incorporators, Charles J. Off, John R. Halbert, and Walter Off.

**New York City**—Simon Nager, Jr., Icn. of Brooklyn, N. Y., coal and coke merchants, $100,000. Frederick M. Livingston, John C. Williams, Simon Nager, Jr., Rockville Center, L. I.

**Williamsport, Penn.**—Application will be made by John A. Vandergrift, Scott Jenkins, M. T. Day, Fred A. Midgle and C. H. McCauley Jr., 10th day of Oct. Rock Run Coal Company.

**Louisville, Ky.**—The Eastern Kentucky Coal Co. of Louisville, Ky., to deal in coal and other fuel. Capital $10,000. Incorporators, Allen Smith, George Stegard, and others of Cincinnati, O.

**Phoenix, Ariz.**—Charter has been granted to the States Mutual Consolidated Mining Co. of Phoenix, to mine coal and other minerals; capital, $5,000,000; V. A. Brewer, pres.; Robt. McKee, secretary.

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**Logan, W. Va.**—Island Creek Coal Co. of Logan, to develop coal and other mineral lands in Logan district of Logan county. Capital $50,000. Incorporators are W. C. McCall, A. C. McOnnaughy, B. R. Simms, R. H. Hamiland, F. W. Gerchaw, all of Logan.

**Osceola Mills, Penn.**—Application will be made by J. F. Steinman, John Benson and Harry Boulton for the charter of an intended corporation to be called the Hale Coal Co. The same incorporators have applied for a charter for the Lady Smith Coal Mining Co.

**Welch, W. Va.**—New Pocahontas Coal Co., of Welch, W. Va., to mine coal in McDowell county, W. Va. Authorized capital $25,000. Incorporators W. E. Deegans, and William Brown, of Glen Jean, W. Va., J. H. McCullough, Jesse Fay and O. C. Hoffman of Welch.

**Vaughan, W. Va.**—Greendale Collieries Co., of Vaughan, W. Va., to mine coal and manufacture lumber in Nicholas county, W. Va., Capital $100,000. Incorporators J. E. Griffiths, of Vaughan, W. Va., J. A. Shewey, Charles Shewey and R. K. Morton, of Charleston, W. Va.

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## Pittsburgh, Penn.

*Bituminous*—The coal famine has reached more serious proportions, and there are no sellers in the district. One of the last to drop out of the market advanced asking prices in the hope of shutting off demand, but got up to $1.75 for 1¼ in. and was still receiving orders. Producers are now confining their attention to filling contracts as well as may be, but are practically all short in shipments. Production is being kept down equally by the shortage of both cars and labor. It is not so much the lack of men as an unwillingness on the part of any of them to work full time.

The majority of operators will not contract for shipment beginning at once, but some will if the delivery period runs over a whole year. Others take an intermediate course, and will book contracts for six months, provided shipments do not begin until Dec. 1, or at the close of the Lake season. We note one such contract closed at $1.27½ for mine-run, for six months from Dec. 1.

For twelve months, beginning at once, the usual quotation, where the operator is willing to sell at all, is on the regular season basis, adopted last spring, but soon departed from in competition, and we quote the contract market on this basis, with prompt unquotable: Mine-run and nut, $1.22½; ¾-in., $1.32½; 1¼-in., $1.47; slack, 82½ cents.

*Connellsville Coke*—The trade has been highly excited, with many furnaces which have regular contracts, making purchases in the spot market, and this has sent prices up to a famine level. While there has been an increase in consumption in the past 30 days, it has not been in proportion to the amount of buying of spot and prompt coke, and there is reason to believe that furnaces are obtaining their coke very largely at 50 to 100 per cent. above the contract prices; in other words, that furnaces are short of coke because operators are selling for spot and prompt shipment. Of course, this is by no means true of all operators, but there seems to be little reason to doubt that it is of some of them. The highest price reported paid thus far is $4, which it is stated was the price made Oct. 12 on 100 cars for spot shipment to a smelter. In some quarters this report is denied, but it is well known that prompt furnace coke has brought $3.50 and $3.75 in the past two or three days. Contract coke has also advanced, the latest contract for first half having been at $2.75, and for only an indifferent grade. This same price was paid two or three weeks ago, but that was for a selected furnace coke, to be used in cupolas at a bessemer-steel works. We quote: Prompt furnace, $3.50@3.75; contract furnace, $2.75@3; prompt foundry, $3.75@4; contract foundry, $2.75@3.

The *Courier* reports production in the Connellsville and lower Connellsville region in the week ending Oct. 5 at 398,201 tons, an increase of 16,000 tons, and shipments at 4083 cars to Pittsburgh, 6559 cars to points West and 1009 cars to points East, a total of 11,651 cars, an increase of 500 cars.

## Philadelphia, Penn.

The past week has seen no change in the anthracite situation and everybody is still complaining about not being able to get sufficient coal to keep their customers supplied. It is becoming the fashion now to have delegations made up from dealers in the respective localities, to wait upon the coal companies with the idea of securing additional supplies. It is understood that they are all successful in having interviews, and their questions answered as to the probable outcome, but it is doubtful whether they accomplish anything further. Every size of domestic is reported to be far oversold, and customers have to wait some time before orders are filled.

As far as can be seen now, there is not likely to be any change in the situation, at least, not in the immediate future. After Lake navigation closes, considerable coal that is now going into the West and Northwest will be diverted to the East, and will in a measure, fill some of the gaps, but in the meantime, the dealers will be hard put to satisfy their customers. Stove coal seems to be the stumbling block at the present time; it is being quoted at $5.50 at the mines, which is an advance of $1.50 over the so called circular of the large companies.

## Baltimore, Md.

Inability to procure labor and the continued shortage of cars still prove obstacles in the way of the coal trade here. The absolute lack of miners was more keenly felt during the week than at any time in recent years. Many of the mines were compelled to operate on half time, and reports the latter part of the week were to the effect that several operations had to suspend work for some days, owing to the lack of men.

The car situation has improved but little, so far as the market is concerned. The movement on both the Baltimore & Ohio and Western Maryland is better, especially on the latter system. For weeks this road was congested with traffic, and for a short period it was well nigh impossible to get consignments through from the coal regions to tidewater. Shipments on the Baltimore & Ohio have been about normal.

The market is about as strong as one could wish for, with the price level the same as last week, and buyers still willing to buy. But few consumers are stocking up as they are unable to get any large quantities of coal, and are satisfied with a car or two at a time. In any event, they could not get more if they wanted it, and the trade is making no promises about deliveries.

There was a sensational rise in coke prices, owing to the scarcity of labor and the unusual activity in the steel business. Connellsville coke is quoted at $3.25 per ton, which is the best price known in this city for years.

## Buffalo, N. Y.

The feverish condition of the entire coal trade continues. Prices, where not fixed by the large producer, are steadily going up in the anthracite trade because of scarcity, and in the bituminous on account of the rapid increase in consumption.

The Lake steamers are coming from Ohio ports to Buffalo light, after coal cargoes, on account of the reduction of the bituminous supply, due both to the heavy demand and the West Virginia strike, the latter district always shipping heavy tonnages west by Lake. There has been a large movement of bituminous by Lake already, so that there ought not to be any shortage within the reach of the Lake fleet, even if the movement is not heavy thereafter.

There is no letting up of the demand for anthracite anywhere, and though the Lake tonnage is likely to be about equal to last season, the report is that no surpluses have been accumulated and none looked for right away. Independent anthracite is selling in this market as high as $2.35 over the circular, and there are no regular orders canceled yet.

Pittsburgh quotations, f.o.b. Buffalo, are: Select lump, $3; three-quarter, $2.80; mine-run, $2.70; slack, $2.35, all quite strong. Coke continues to lead in activity, being now quotable at $5.60 for the best Connellsville foundry, with no stock coke in sight. This is the highest figure on coke that the trade has known in several years.

Anthracite shipments to the Lakes for the week were 175,000 tons, which is considerably more than the ordinary season's average. It looks as if the total at the end of the season would be close to that of last year. Shippers continue quite nervous over the outlook, for they say a cold snap will increase the complaints of consumers and dealers to the limit.

## Columbus, Ohio

With an insistent demand for all grades and prices ruling firm in every particular the coal trade in Ohio is decidedly strong. The car shortage is still the ruling factor and it appears to be growing worse instead of better. As a result, dealers as well as steam users, are urging more prompt deliveries and both are making strenuous efforts to cover.

No new circular will be announced by

Ohio operators, effective Oct. 15, as was expected earlier in the month. The reason is that the continued warm weather has made the trade in retail circles a little slack and operators are hesitating to force the market by advancing prices just at this time. There is every indication, however, with colder weather and the continued car scarcity that there will be an increase Nov. 1.

Domestic is still one of the strongest points in the market. Despite the fact that the retail demand is quiet at this time, dealers foresee serious results in the car shortage and are making every effort possible to stock up against an emergency. Orders have been placed for immediate shipment and there is scarcely any canceling at this time. Some of the larger householders have stocked up for the winter, but there is still a good demand in other directions.

The Lake trade continues as active as could be expected under the circumstances. While cars are quite scarce, shipments to the Northwest via the Lakes are still active and the 2,000,000-ton mark has been reached by the Toledo docks of the Hocking Valley Ry. There is still a good demand for domestic and steam sizes from the upper Lake ports and unless the winter is a mild one, there will probably be a fuel famine. Dock prices show a tendency to advance.

Quotations in the Ohio fields are:

| | Hocking | Pittsburgh | Pomeroy | Kanawha |
|---|---|---|---|---|
| Domestic lump | $1.75 | | $2.00 | $1.75 |
| 2-in. | 1.55 | $1.20 | 1.55 | 1.55 |
| Nut | 1.25 | | 1.50 | |
| Mine-run | 1.30 | 1.05 | 1.50 | 1.30 |
| Nut, pea and slack | 0.95 | | 1.00 | 0.85 |
| Coarse slack | 0.85 | 0.80 | 1.00 | 0.75 |

## Knoxville, Tenn.

Operators on the Southern Ry. are complaining vigorously because of the exceedingly short supply of cars, one claiming that the supply has been short 70 per cent. in the last three weeks on this road and 20 per cent. on the L. & N. Others intimate that the railroads are confiscating the coal cars of other roads and are diverting these to the cotton fields where a heavy movement is now on.

The demand continues strong, especially for the steam grades. The steam market during the late summer months was at the lowest ebb it has been in many years, but now there seems to be a general industrial revival coming all over this section.

A number of operators in the Kentucky-Tennessee field have local retail yards here which are heavily stocked. The retail prices have advanced to within 25c. of the highest price of last winter, and this may be taken as a good indication of the domestic market throughout the South. Shippers in this field are successfully entering the Northwestern markets, which relieves the sulpluses here to some extent.

## Memphis, Tenn.

Weather conditions in this district continue quite favorable to the coal operators. After a short cold snap it cleared off, with the result that the demand eased up and the effects of the car shortage, and consequent curtailed output, are not being so seriously felt. However, the movement on the I. C. R.R. is still very slow and mines are running scarcely any at all.

There is also a shortage in evidence on the L. & N. R.R., which has caused a general stiffening up in prices and a more healthy demand for coal from that section. On the Frisco and Southern railroads the shortage has been growing steadily worse for the past month with the result that the mines along these lines are swamped with orders that they are unable to fill.

The market is quotable about as follows:

| | |
|---|---|
| *Western Kkentucky* | |
| Via I. C. R.R. | |
| No. 1 lump | $1.50@1.60 |
| No. 2 lump | 1.20@1.35 |
| No. 1 nut | 1.15@1.30 |
| Mine-run | 0.95@1.05 |
| Screenings | 0.35@0.65 |
| Via L. & N. R.R. | |
| No. 1 lump | $1.20@1.35 |
| No. 2 lump | 1.15@1.25 |
| No. 1 nut | 1.00@1.10 |
| Mine-run | 0.85@0.95 |
| Screenings | 0.25@0.60 |
| *Illinois* | |
| No. 1 lump | $1.85 |
| Egg | 1.75 |
| No. 1 nut | 1.80 |
| Mine-run | 1.30 |
| *Alabama* | |
| Cahaba lump (block) | $3.00 |
| Carobn Hill (block) | 2.00 |
| Carbon Hill Nut | 1.75 |
| Mine-run | 1.20 |
| *Kentucky-Tennessee* | |
| Block coal | $2.25@2.50 |
| No. 1 lump | 2.20@2.35 |
| Nut | $1.80 |
| Screenings | 0.80@0.95 |

## Indianapolis, Ind.

The coal shortage in this state is becoming rapidly worse and the indications now are that the proposition of keeping warm the coming winter is going to be an expensive one.

The retail price for hard coal in many Indiana towns is $9 per ton and dealers say they expect it to go to $11 and that soft coal will reach $5 per ton. There is but little anthracite to be had in many towns at any price. Soft coal is retailing in the local market at $4 a ton and another advance is expected soon, as the wholesale prices are increasing.

Both the Indiana Railroad Commission and the Interstate Commerce Commission have entered upon an investigation of the car shortage. Producers and manufacturers have joined the coal operators in their condemnation of the transportation companies. The railroad companies say the trouble is due to the rule allowing loaded cars to be held too long without demurrage charges.

## Detroit, Mich.

This market has had a far steadier tone during the past week than during the preceding three or four weeks. Prices, though at times fluctuating, have remained practically the same.

The anthracite question is as unsettled as ever. The retail price remains about $9 per ton, although some predict it will reach $12. This unreasonable figure is doubtful, however, as most consumers are supplied with enough to fill their wants until mid-winter, and it is then probable that there will be larger quantities coming in or at least sufficient to carry them through the balance of the winter.

General market conditions during the past week showed a steadily increasing demand for all grades, comparatively slow arrivals, and steady prices, with a slight increase in the domestic.

Prevailing prices are as follows:

| | Domestic lump | ¾-lump | Mine-run | Nut and slack |
|---|---|---|---|---|
| W. Va. Gas | ... | $1.35 | $1.25 | $0.95 |
| W. Va. Splint | $1.75 | 1.40 | 1.35 | 0.95 |
| Pocahontas | 2.75 | .. | 1.60 | 1.35 |
| Hocking | 1.75 | 1.40 | 1.30 | 1.05 |
| Pittsburgh No. 8 | .. | 1.30 | 1.20 | 1.05 |
| Jackson Hill | 2.50 | ... | ... | ... |

## Chicago

There is a heavy demand from manufacturing concerns for immediate shipment. On the average, steam users are taking 40 to 50 per cent. more coal than last year. This unusual call for the steam product is regarded as a most significant factor in market conditions. Observers consider that it places a solid foundation under the trade.

In reporting on their steam contracts, a number of large operators say that the amounts specified were based upon consumption last year, with provision for a maximum tonnage somewhat in excess of the year's shipments. An analysis of their tonnages disclosed that in almost every case consumers had specified the maximum amount. In a number of instances the consumption of plants this year has been from two to three times that during the same period a year ago.

At this time of the year, screenings are usually sold at exceptionally low prices, while now they are quoted all the way from 65 to 90c. a ton, according to quality. We quote the Chicago market:

| | Sullivan Co. | Springfield | Clinton | W. Va. |
|---|---|---|---|---|
| 4-in. lump | $2.62@2.77 | | | |
| Domestic lump | | $2.82 | $2.52 | |
| Egg | 2.62@2.77 | | | $4.40 |
| Steam lump | | 2.12 | 2.27 | |
| Mine run | 2.32@2.42 | 1.97 | 1.92 | 3.45 |
| Screenings | 1.52@1.57 | 1.32 | 1.52 | |

*Coke*—Prices asked for coke are: Connellsville, $5.60@5.75; Wise County, $5.35@5.50; byproduct, egg and stove, $5.35@5.50; byproduct, nut, $5.25; gashouse, $5@5.15.

## Minneapolis—St. Paul

Conditions in the Twin Cities and the Northwest have not improved materially during the past week or two. Circulars have been issued by some of the dock companies under date of Oct. 10, advising the trade that the price on all grades of soft coal had advanced 10c. per ton over the Oct. 1 quotations, with the exception of splint coals, which are increased 25c. per ton. Some companies are also sending advises along to the effect that they cannot accept orders for future delivery, excepting with the understanding that the price current at the time of shipment will apply.

The milder weather of late has not helped much in decreasing the number of hard-coal orders booked, and a great many dealers throughout the country have substituted other grades of coals; coke is being ordered for this purpose quite freely, even though the price has advanced. Indiana and Illinois quotations have been soaring upward and cars have become quite scarce.

## St. Louis, Mo.

The high-grade market, Carterville and Franklin County, is remaining rather firm, although there is a tendency for it to break. If the weather gets cold the latter part of the week, however, it will still hold up. Standard is weakening a little, and the only thing that is holding it together is the fact that there are no cars.

Last week mines on the Illinois Central worked only about one full day. The car shortage is affecting the following roads: Mobile & Ohio, Illinois Central, Louisville & Nashville, Baltimore & Ohio, Vandalia, Wabash, as well as the Frisco and Iron Mountain in the Carterville district.

The prevailing market is:

| | |
|---|---|
| *Carterville and Franklin County* | |
| 6-in. lump | $2.00@2.15 |
| 3x6 egg | 1.90@2.10 |
| No. 1 nut | 1.60@1.75 |
| No. 2 nut | 1.35@1.50 |
| Screenings | 0.70@0.80 |
| Mine-run | 1.20@1.25 |
| No. 1 washed | 2.00@2.25 |
| No. 2 washed | 1.75@1.85 |
| No. 3 washed | 1.50@1.60 |
| No. 4 washed | 1.20@1.30 |
| No. 5 washed | 0.80@0.90 |
| *Trenton* | |
| Lump and egg | $2.25 |
| *Big Muddy* | |
| Lump and egg | $2.50 |
| *Mount Olive* | |
| 6-in. lump | $1.65@1.75 |
| Egg | 1.50@1.65 |
| 2-in. lump | 1.50@1.65 |
| Screenings | 0.35@0.45 |
| *Standard* | |
| 6-in. lump | $1.50@1.60 |
| 2-in. lump | 1.25@1.35 |
| Screenings | 0.25@0.35 |

There is no anthracite moving in at any price, and byproduct coke is about the same. Gas-house coke is worth $4.85 and $5 at St. Louis. Smokeless is in good demand at $4.80 for lump, and $4.65 to $4.75 for egg.

## Portland, Ore.

Cooler weather is beginning to prevail here and as a result the demand for the winter has increased. Business is fair and difficulty is encountered in filling the demands. There is a car shortage in the Northwest on account of the heavy movements of crops, but the coal trade has not suffered to any serious extent. Values are the same as they have been all summer and dealers do not indicate any immediate change. No Australian coal will be brought here direct this season as far as known, for no vessels have been reported as chartered for such business, although many are *en route* to San Francisco.

## Production and Transportation Statistics

### Norfolk & Western Ry.

The following is a comparative statement of the coal and coke shipments over the lines of the N. & W. Ry. for the month of August of the current year, and the first eight months of the years 1911-12, in short tons:

| Destination | August | Eight Months 1911 | 1912 |
|---|---|---|---|
| *Coal* | | | |
| Tidewater, foreign. | 74,964 | 667,220 | 1,025,857 |
| Tidewater, coastwise | 317,398 | 1,896,050 | 2,437,211 |
| Domestic | 1,722,580 | 9,572,103 | 11,717,487 |
| *Coke* | | | |
| Tidewater, foreign. | 2,661 | 57,346 | 52,762 |
| Domestic | 111,801 | 988,108 | 901,139 |
| Total | 2,229,404 | 13,180,827 | 16,134,456 |

### Norfolk & Western Ry.

The following is a statement of tonnages shipped over this road from mines in West Virginia and the commercial and company coal, for the month of August, in short tons:

| Field | Tipple Coal | Total Coal | Commercial | Company |
|---|---|---|---|---|
| Pocahontas | 20,576 | 1,339,466 | 1,323,928 | 88,820 |
| Tug River | 3,990 | 221,176 | 187,118 | 34,058 |
| Thacker | 3,498 | 250,842 | 192,294 | 58,548 |
| Kenova | 7,654 | 92,949 | 84,176 | 8,773 |
| Clinch Valley | ..... | ..... | 127,955 | 9,272 |
| | 35,718 | 1,904,433 | 1,915,471 | 199,471 |

Shipments of coke originating entirely from the Pocahontas field amounted to 92,018.

## Foreign Markets

### Great Britain

*Oct.* 4—Quiet and dull conditions are again in evidence in the steam-coal trade, chiefly on account of inadequate tonnage supplies. For spot shipment, sellers are prepared to accept easy figures in order to release cars. Prices are approximately as follows:

| | |
|---|---|
| Best Welsh steam coal | $4.08 |
| Best seconds | 3.90 |
| Seconds | 3.66 |
| Best dry coals | 3.90 |
| Best Monmouthshire | 3.66 |
| Seconds | 3.42 |
| Best Cardiff small coal | 2.52 |
| Seconds | 2.46 |

The prices for Cardiff coals are f.o.b. Cardiff, Penarth, or Barry, while those for Monmouthshire descriptions are f.o.b. Newport; both exclusive of wharfage, and for cash in 30 days, less 2½ per cent.

## Financial Notes

### Coal Securities

The following table gives the range of various active coal securities and dividends paid during the week ending Oct. 12:

Stocks

| Company | High | Low | Last |
|---|---|---|---|
| American Coal | 85 | 85 | |
| American Coal Prod. | 94½ | 94½ | 94½ |
| American Coal Prod. Pref. | 118 | 118 | 118 |
| Col. Fuel & Iron | 43⅜ | 41½ | 41½ |
| Consol. Coal of Md. | 104 | 103½ | |
| Island Creek Coal | 58 | 56½ | |
| Lehigh Valley C. Sales | 260 | 250 | |
| Pitts. Coal | 25½ | 24 | 24 |
| Pitts. Coal Pref. | 98 | 96½ | 97⅛ |
| Pond Creek | 24 | 22⅜ | |
| Reading | 177¾ | 174¼ | 175½ |
| Reading 1st. Pref | 90 | 88½ | 90 |
| Reading 2nd. Pref. | 98 | 96¼ | 96½ |
| Va. Iron C. & C. | 69 | 66 | 66 |
| Westmoreland Coal | 81 | 81 | |

Bonds

| Company | Closing Bid | Asked | Weeks Range or Last Sale | |
|---|---|---|---|---|
| Colo. F. & I. gen. s f g 5s | 98⅜ | .... | 98⅜ | Sept. '12 |
| Col. Fuel gen. 6s | 106⅜ | 108½ | 107½ | June '12 |
| Col. Ind. 1st & coll. 5s. gu. | 84¼ | Sale | 84½ | 85¼ |
| Cons. Ind. Coal Me. 1st 5s. | .... | 84½ | 85 | June '11 |
| Cons. Coal 1st and ref. 5s. | .... | 93⅞ | 93 | Oct. '12 |
| Gr. Riv. Coal & C. 1st g 6s.* | .... | 94¼ | 102⅜ | Apr. '06 |
| K. & H. C. & Co. 1st s f g 5s. | 97½ | .... | 98 | 98 |
| Pocah. Con. Coll. 1st. s f 5s. | 85 | 88 | 86 | Sept. '12 |
| Tenn. Coal gen. 5s | 101⅛ | Sale | 101⅛ | 101⅛ |
| Birm. Div. 1st consol. 6s. | 102 | 103¾ | 103¾ | Sept. '12 |
| Tenn. Div. 1st g 6s. | 102 | 103 | 102½ | 102½ |
| Cah. C. M. Co. 1st g 6s. | 103½ | 110 | 110 | Jan. '09 |
| Utah Fuel 1st g 5s | .... | .... | .... | .... |
| Victor Fuel 1st s f 5s | .... | 85¾ | 86 | May'12 |
| Va. I. Coal & Coke 1st g 5s. | 97¼ | Sale | 97 | 97¼ |

*No quotations Saturday.

No important dividends were announced during the week.

**Alabama Consolidated Coal & Iron Co.**—In addition to the heavy bonded indebtedness of this company on which default has been made the company had a current liability April 31 last of $726,485. A payroll aggregating $40,000 was not met about the middle of June.

**Pittsburgh Coal Co.**—Earnings of this company for the first quarter of the current year were about $612,000 better than in the corresponding period last year. In the first three months last year, operations resulted in a deficit of $112,000, whereas this year there was a net surplus of $500,000.

**Reading Co.**—Up to the end of March this year, this company had earnings for the nine months at the rate of 11.5% for the common after prior dividends and additions and betterments. The April loss in surplus, due to the strike was $1,344,427 and the May loss, $1,116,860, a total of $2,461,287 and equivalent to 3⅛% on the common stock.

**Colorado Fuel & Iron Co.**—For the fiscal year ended June 30 last, this company showed a surplus after charges for the year of $1,801,228, an increase of $541,556 over 1911 and a gain of $294,410 as compared with 1910. Net earnings from operations were approximately $300,000 greater than in the previous year and $50,000 better than in 1910.

**Clinchfield Coal Corporation**—The common stock of this corporation will represent the ownership of land and interest in lands in fee and mineral and surface rights to the extent of approximately 300,000 acres, respecting which approximately $3,300,000 have been expended in developments, improvements and machinery. This item does not include interest paid on moneys expended in developments nor the extra cost of producing coal at the mines under development prior to the time when the output reached a normal operative basis and which extra cost will probably be charged to the development account.